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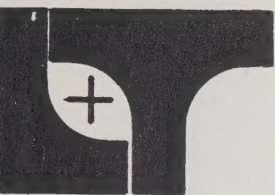


Contra Costa  
County, Calif.









Land Use  
and  
Transportation  
Study

CONTRA COSTA COUNTY  
CALIFORNIA

# STUDY DESIGN

The preparation of this document was financed in part through an urban planning grant from the Department of Housing and Urban Development, under the provisions of Section 701 of the Housing Act of 1954, as amended, and in part through Highway Planning and Research Funds, from the Department of Transportation, Bureau of Public Roads, under Title 23, United States Code, Section 307(c)(2).





CONTRA COSTA COUNTY  
LAND USE & TRANSPORTATION STUDY

STUDY DESIGN

Prepared By:

Tudor Engineering Company, San Francisco  
and  
Livingston and Blayney, San Francisco  
Wilbur Smith & Associates, San Francisco  
Kennedy Engineers, San Francisco  
Stanford Research Institute, Menlo Park

With the Assistance Of:

The Planner-in-Charge  
The Land Use and Transportation Study Coordinator  
The County Planning Department  
and  
The County Public Works Department

FEBRUARY, 1969



XS 3851

In the Board of Supervisors  
of  
Contra Costa County, State of California

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213  
C2 C6  
ENVI

January 28, 1969

In the Matter of

Adopting Revised Study Design  
and Budget for the Land Use  
and Transportation Study.

WHEREAS this Board on January 16, 1968 established a Policy Committee for the Land Use and Transportation Study to serve in an advisory capacity to the Board of Supervisors on establishing a continuing, comprehensive land use and transportation planning process for the county; and

WHEREAS this Board on January 23, 1968 established a Technical Committee to provide professional advice in connection with the Land Use and Transportation Study; and

WHEREAS these two committees together with the County Planning Director and Public Works Director have recommended the adoption of the Revised Study Design and Budget which has been prepared in collaboration with the Study Coordinator and the consultant team, and the County Planning and Public Works Departments; and

WHEREAS this Study Design will specify the various work elements to be accomplished during the conduct of the study;

NOW, THEREFORE, on motion of Supervisor T. J. Coll, seconded by Supervisor A. M. Dias, IT IS BY THE BOARD ORDERED that said Revised Study Design and Budget is hereby ADOPTED.

The foregoing order was passed by the following vote of the Board:

AYES: Supervisors J. P. Kenny, A. M. Dias,  
T. J. Coll, E. A. Linscheid, J. E. Moriarty.

NOES: None.

ABSENT: None.

I hereby certify that the foregoing is a true and correct copy of an order entered on the minutes of said Board of Supervisors on the date aforesaid.

cc: Planning Department  
Public Works Department  
County Administrator  
Study Coordinator (6)  
County Auditor

Witness my hand and the Seal of the Board of  
Supervisors

affixed this 28th day of January, 1969

W. T. PAASCH, Clerk

By Elsie Pigott, Deputy Clerk  
Elsie Pigott





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## I. INTRODUCTION

### 1. Purpose of the Land Use and Transportation Study

The Land Use and Transportation Study is the name given to a planning effort initiated by the County of Contra Costa to anticipate and prepare for growth and change throughout the County during the next two decades. With population expected to reach one million persons before the end of the century, the resulting immense public and private development must be carefully related if the County as a whole is to function well and if the qualities of living here are to remain high. The study was created as a means of joining the jurisdictions, programs, and technologies necessary for performing the planning work to be done. As a planning effort, the study conveys no new powers to any agency; rather, it is a means of significantly improving present functions through better information and methods and a concentration of effort.

The Land Use and Transportation Study is both a mechanism for accomplishing Countywide planning and a concise technical planning project. A group of committees is responsible for the guidance, content, and approval of recommendations of the Study, and these are predominantly composed of representatives of other jurisdictional levels. Additional coordination will be achieved through working relationships at the staff level which will be maintained with cities and other agencies throughout the course of the study. As in the past, County government must prepare its plans for development, circulation and services in a Countywide context in order to plan realistically for the unincorporated area, and these plans must embody high degrees of consensus in respect to the development of the cities and their environs in order to function as instruments of cooperation in various city-county programs. The conduct of the study departs from the past only in the extent to which non-county government representatives are formally involved in and responsible for a County-sponsored planning operation.

The originating rationale for the Land Use and Transportation Study is that planning for land use and transportation facilities must be done concurrently because each influences the other. Consequently,

the technical planning project of the study is largely a combination of two programs: the comprehensive planning program which is heavily concerned with land use and which will formulate an updated general plan as its main product; and the transportation study which both contributes to the general plan and which will produce information required for the development of transportation systems. These functions and activities are presently being performed by County departments, but will be intensified, expanded, and more closely correlated to achieve the purposes of the study. Complementary work being done by city, regional, and state agencies will be used to the optimum. The County staff efforts will be supplemented by a team of consultants selected for their expertise in the subjects of planning encompassed by the study. Financial assistance for the technical planning program will be provided under programs of the Federal Department of Housing and Urban Development for the comprehensive planning program and Federal Department of Transportation for the transportation study.

Because planning for land use and transportation necessarily involves co-equal planning for other subjects reflected in or related to a general plan, the comprehensive planning program will also be concerned with the preparation of utilities, community facilities, housing, and open space elements, to name a few, and with effectuation matters. The general plan produced is expected to replace the present plan. Like the present plan, it will be County-wide in coverage but controlling insofar as County government is concerned in the unincorporated area. The effectuation measures are to refine current programs of County government, but it is intended that they achieve improved coordination with the effectuation programs of other jurisdictions.

Plans are formulated from background information on a wide variety of subjects. The study, therefore, contains a number of studies which will not directly result in plans but which provide a foundation for the formulation of the land use, transportation, and other plans. These include studies of population, economics, and natural resources. In some cases, these studies will compile and arrange existing information in forms which are usable for planning purposes; in other cases, the studies will originate information. It is expected that these studies will also result in information files which can be kept current for subsequent planning.



The technical planning project of the study is as concerned with the development of planning methods and systems as it is with the production of plans. The best of plans become obsolescent rapidly, but the investment in them is retained if updating is accomplished frequently and at regular intervals; this is contingent on the availability of current information and methods for evaluation and forecasting. A considerable amount of effort in the study will be devoted to the creation of planning files which can be kept current, to the establishment of methods which can be used to keep track of the directions, magnitudes, and characteristics of growth, and to the determination of appropriate forecasting methods for the information required for planning. To the extent practicable, these systems will utilize electronic data processing techniques.

By the time the present technical planning project is concluded, in approximately five years, it should have produced a new Countywide general plan containing many more elements than the present plan, a transportation plan detailing the circulation element of the general plan, several major background studies, several planning systems, and an effectuation program for carrying out the plan. County government will have a new set of basic plans, enhanced capabilities to plan, and superior means of guiding development and providing services. The cities and other jurisdictions will have the benefit of knowing with a greater degree of assurance what is likely to occur in their environs, they will have available to them far better information and data on a number of subjects than is now available for application in their own planning programs, and they will have access to the planning systems and methods developed by the study.

Although the study is programmed for five years, it or an equivalent effort should continue indefinitely. There will be an obvious need to keep the plans produced by the present study up to date. There will also be a need to perform studies and formulate plans for subjects not included in the present study for reasons of budget or inappropriate sequence, or revealed by the study to be necessary. The contents and sequencing of future planning work will be evaluated regularly during the course of the present study and not at its conclusion.

## I. INTRODUCTION

### 2. Purpose of This Study Design

This study design document, prepared pursuant to the request made by the Land Use and Transportation Study Policy Committee on August 1, 1968, represents a broadened scope and expanded content of the study program originally initiated by Contra Costa County in 1965 in compliance with the U.S. Department of Housing and Urban Development (HUD) planning assistance program and the Department of Transportation, Bureau of Public Roads (BPR), highway planning assistance program.

Its purpose is to describe the Comprehensive Land Use and Transportation Study as revised, its general scope and content, its objectives, methodology, and final products, the estimated cost of each element, the schedule for each element and the sequential relationship of each element to the others and to the study as a whole.

This study project as a whole is comprised of both a County-wide transportation study and a comprehensive planning program encompassing the long-range planning functions of the Planning Department and the Public Works Department, and affecting or pertaining to those of several other agencies or special districts. Although the study project is under County auspices and is County-wide in scope, it is intended that the cities of the county, presently fourteen in number, and pertinent, affected or concerned special districts or jurisdictions be included and considered as participants. For this purpose, memoranda of understanding have been entered into by the County and the cities and other agencies vitally concerned.

## I. INTRODUCTION

### 3. Historical Background

When the Federal-Aid Highway Act of 1962 was enacted, Contra Costa County recognized the need to update, revise and extend the plan and program developed for freeways, expressways, and major thoroughfares in Contra Costa County in 1958, in line with the mandate of Section 9 of the Act which declared as national policy that there be established a continuous planning program as a prerequisite for federal financial assistance for street and highway projects, and that "after July 1, 1965, the Secretary (of Transportation) shall not approve...any program for projects in any urban area of more than fifty thousand population unless he finds that such projects are based on a continuing comprehensive transportation planning process carried on cooperatively by States and local communities."

The Contra Costa County Board of Supervisors on September 21, 1965, authorized the County Public Works Director to employ Alan M. Voorhees and Associates, Inc. of Washington, D.C. to prepare a prospectus for a planning study program for Contra Costa County. The study prospectus was developed so as to include land use and community facilities planning, conforming with the requirements of the Housing Act of 1954, the Housing and Urban Development Act of 1965 and the provisions for Federal planning assistance under the Section 701 program. On January 25, 1966, acting on the recommendations of the Public Works Department, the Planning Department and the County Administrator, the County Board of Supervisors approved and adopted the study prospectus as prepared.

In order to assure that the study would be carried out in full recognition of the role of the County in relation to its incorporated cities on the one hand and to the several special districts and regional agencies on the other, the Board of Supervisors entered into memoranda of understanding with the thirteen



incorporated cities existing at that time within the County; with the Association of Bay Area Governments, the voluntary council of governments designated as the regional planning and application reviewing agency; with the Bay Area Transportation Study Commission which had been established by the State Legislature and charged with the development of a regional transportation plan by 1969 and the formulation of recommendations for subsequent organization for carrying on a continuous transportation planning program at the regional level; with the Bay Area Rapid Transit District established for the purpose of developing and operating a regional rapid transit system; and with other park, water, sanitary, and utility agencies and districts. These were to assure cooperative participation and relationships between the County and the other units.

On May 4, 1966, the County formally filed an application with the Department of Housing and Urban Development, through the California State Office of Planning, for Section 701 financial assistance for those elements described in the study prospectus which were eligible for such assistance.

The County also formally filed an application with the California Division of Highways for federally supported highway planning financial assistance for those elements described in the study prospectus which were eligible for such assistance.

On September 2, 1966, the County, after receiving and reviewing proposals for consultant participation in the study in accordance with the procedures set forth in the prospectus, notified Tudor Engineering Company that it and its team firms, consisting of Livingston and Blayney, Stanford Research Institute, Wilbur Smith and Associates, and Kennedy Engineers, were recommended for selection as consultants by the Screening Committee to assist the County in undertaking the Study.

On March 7, 1967, an agreement between Tudor Engineering Company and Contra Costa County was approved by the Board of Supervisors.

On March 9, 1967, Tudor Engineering Company received from the County a notice to proceed with the "Study Design for Land Use and Transportation Program." This notice to proceed

was intended to extend only to assistance to the County in preparing agreements between the State Office of Planning and the State Division of Highways.

On September 1, 1967, the new position of Study Coordinator, established to represent the County Administrator and the County on all aspects of the study, was filled by appointment from a list formed by the County Civil Service Commission.

On November 1, 1967, Contra Costa County and the State Office of Planning entered into an agreement for those elements of the Study to be financed in part by the Department of Housing and Urban Development (HUD), and Tudor Engineering Company and its team firms were then given a notice to proceed, by the County, on those elements to be financed in part by HUD.

On November 27, 1967, the Study Policy Committee, consisting of two members of the County Board of Supervisors and one elected official from each of the 13 cities within the County, held their first meeting to discuss the Study.

On January 2, 1968, the Study Technical Committee, comprised of four city planning directors, selected by the City-County Planners Association of Contra Costa County and four city public works directors, selected by the City-County Engineering Advisory Committee, held its first meeting to discuss the study and the role of the Technical Committee.

On February 28, 1968, the County and the State Division of Highways consummated an agreement for those elements of the study to be financed in part by the Bureau of Public Roads (BPR). The County, on March 1, 1968, issued Tudor Engineering Company a notice to proceed with the BPR-aided elements of the Study.

On June 30, 1967, the long-vacant position of Chief of Advance Planning in the County Planning Department was filled. On July 25, 1967, the County Planning Director announced his retirement and the position was filled on an interim basis until July 1, 1968, when the new permanent Planning Director was appointed. With these key positions filled on a permanent basis the County Planning Department assumed a much more active role in the conduct of the study.

During this organizational period there were numerous meetings of the County representatives, the Study Policy Committee, the Study Technical Committee, the State Office of Planning, the Division of Highways, the Region VI office of the Department of Housing and Urban Development, and the consultant pertaining to the review and revision of the study design in accordance with the program set forth in the prospectus. Because of differences in the understanding and interpretation of the content and intent of the study prospectus, Tudor Engineering Company was directed by the County to prepare a revised work component description and work program, covering a three-year period, based essentially on the items included in the original prospectus, in order to reconcile the conflicting opinions and interpretations.

A revised work program was submitted to the County by the consultants on May 15, 1968. Following extensive review, it was concluded by the County that the study should be expanded in time and in scope in order to produce a complete and comprehensive general plan as well as a transportation plan, making full use of 1970 base year data, and in order to develop fully a data system and continuous planning program to keep the comprehensive general plan and implementation programs up to date. This policy conclusion was formalized by the Study Policy Committee on August 1, 1968. A new study design was submitted on November 1, 1968. After review by County staff and members of the consultant team staff, further modifications were made resulting in the present document. The Study Policy Committee approved the revised study design and program on January 16, 1969, and the Contra Costa County Board of Supervisors approved it on January 28, 1969.



## I. INTRODUCTION

### 4. Objectives of the Study

The basic objectives of the revised and extended study authorized by the Policy Committee are fourfold:

1. To produce a Countywide revised interim general plan and recommendations as an interim product within approximately three years of intensified resumption of the study. This plan will constitute a currently updated County general plan sufficient in scope to replace as a policy guide the general plan officially adopted in April, 1963. Principal elements of the interim plan will include a land use plan and a transportation plan.
2. To produce a comprehensive Countywide general plan and implementation program at the end of the fifth year of the study. This plan will be more expanded in content and refined in detail than the revised interim general plan and will be essentially formulated from data produced in 1970 or later, and on work produced by the study or related programs.
3. To produce a planning data system within the five-year study period to make feasible the continual updating of the general plan.
4. To develop a continuing comprehensive planning system and process so that the planning and implementation products of this study may be kept current in time as useful guides to County development decisions and actions.

This study design is intended to be the beginning of an intensified and broadened continuing and comprehensive planning process in Contra Costa County to be carried out by an enlarged planning department that will produce a means to anticipate and meet the land use, transportation and public facility needs of Contra Costa County over a long-range period, and by the departments responsible for implementation and operation.

When the original study prospectus was developed for a three-year period, the base year for new and currently available data inputs was 1965. It was anticipated then that the study would be completed before 1970, the next year of the decennial census, and an appropriate time for the gathering of new correlative data.

In step with the regional land use and transportation planning that was underway in the Bay Area in 1965--by the Bay Area Transportation Study Commission (BATSC), the Association of Bay Governments (ABAG) and the San Francisco Bay Conservation and Development Commission (BCDC) -- the initial prospectus for this study was framed to utilize the information and data developed by and derived from these studies, and the broad-gauged plans as well, in order to develop more refined and detailed sub-regional plans to serve the County.

It is the intent of this study design to utilize initially the 1965 base-year data developed by those special regional agencies on land use, employment, and travel patterns and habits. On the whole, this is the best data assumed to be available to update on an interim basis the plans and programs now serving as guides to development decisions in the County. Much greater emphasis, however, will be placed on the use of 1970 data and the development and implementation of a system for uniformly compiling and maintaining land use, demographic, economic and travel behavior data on a continuous basis in machine-readable form which can be stored in a data bank and be readily retrievable and manipulated for various planning and policy decision-making needs.

One new component in this expanded program, which is of key significance to the long-term program of the Planning Department, is the conduct of a detailed land use, space use and condition of structure inventory of every one of the 160,000 parcels of real property in Contra Costa County. Although some cities in the County have made such inventories, none have ever been made in Contra Costa County as a whole. It is intended that this inventory be made in the 1970 census year and that techniques be developed so that such an inventory can be kept current thereafter as a part of the total planning data file. With such an advanced data base, it is the intent of this study design that the County be enabled to continue the planning process put into motion by this study so that subsequently it can extend, refine and modify, as necessary, the conclusions, recommendations and plan elements produced.

Transportation has an intrinsic potential for guiding change and improvement when it is considered in focus as a part of the larger process of shaping an urban environment. This study design has been formulated to produce a short-range and a long-range plan for the transportation requirements of Contra Costa County for the years 1980 and 1990. The short-range plan will be susceptible to immediate implementation measures, and the long-range plan will serve as a guide in formulating an implementation program for the comprehensive plan as a whole.

With the inauguration of service on the Bay Area Rapid Transit system in 1971, the full impact of BARTD as an innovative changer of metropolitan space-time relations will be felt in increased pressures for more intensive, and in some areas, different types of land use than those which have characterized Contra Costa County up to the present time. The impact of this new form of transportation, linking Contra Costa County to the centers of the larger metropolitan region of which it is a part, and the pressure of increased population which it will bring to the County, give added impetus to the development of an interim land use plan and of a later more refined land use plan, a community facilities plan and an implementation program, based on the projection and distribution of population and employment, and on alternate forms and patterns of land use.

The unique qualities of Contra Costa County -- as a residential area where the California way of life may be lived to the fullest, as a production center giving employment to an ever-increasing segment of the population in the work force, and as a recreational area where activities range from boating on the open bay or in the secluded reaches of the Delta to hiking at 4,000-foot elevations overlooking, on a clear day, one-third of the State of California--offer a challenge to those who guide its destiny. These qualities may be preserved and enhanced, or they may be dissipated and destroyed. Increased waves of resident and working population could have a ravaging and rampaging effect if their coming is not adequately anticipated and provided for; or, through good comprehensive, coordinated planning and programming, initiated now, the future of Contra Costa may be heralded as a bright example of foresight and forethought applied to the urbanization of a rich and unique natural area. It is the underlying purpose of this broadened and expanded study design to make the latter alternative possible.









## II. ORGANIZATION, SCHEDULE AND BUDGET

### 1. Organization

In order that the Land Use and Transportation Study may be carried out effectively and that Contra Costa County may attain its objective of a continuing comprehensive planning process, cooperation among local municipalities and among various special local agencies and districts within the County and regional agencies and districts embracing the County will be required. The organization established should remain in force continuously throughout the study period.

As described in the section on Historical Background, Contra Costa County has already entered into cooperative memoranda of understanding for the conduct of this study with the incorporated cities within the County and with various agencies and special districts.

To date, two study committees have been formed and are operable. They are the Land Use and Transportation Study Policy Committee referred to herein as the Study Policy Committee and the Land Use and Transportation Study Technical Committee, referred to herein as the Technical Committee.

One other committee is being formed by the Study Policy Committee, namely the Citizens Advisory Committee. The Study Policy Committee has determined that this Citizens Advisory Committee will be composed of citizens with Countywide interests in one or another section covered by the study, rather than with citizens who represent local areas only. The Policy Committee will establish guidelines and provide a framework within which the Citizens Advisory Committee will exercise its function of expressing the needs and desires of the various segments of the citizenry represented and reviewing and reacting to the progress of the study.

#### Study Policy Committee

The Study Policy Committee was established to have the following functions:

1. Provide policy guidance to technical management and consultant personnel.
2. Coordinate among all jurisdictions the policies relating to the program.



3. Approve and forward requests to local agencies as necessary.
4. Recommend approval, endorsement, or adoption of plans to planning commissions, regional agencies and special districts and/or the County Board of Supervisors, as appropriate.

The Committee was established by the Contra Costa County Board of Supervisors which, on January 16, 1968, unanimously passed the following order:

"Establishment of a Policy Committee for Land Use and Transportation Study.

"On motion of Supervisor E. A. Linscheid, seconded by Supervisor T. J. Coll, it is by the Board ordered that establishment of a Policy Committee for the Land Use and Transportation Study, which shall be concerned with the establishment of a continuing, comprehensive land use and transportation planning process for Contra Costa County and shall serve in an advisory capacity to the Board of Supervisors, is approved, said committee to be comprised of one councilman from each of the thirteen cities in Contra Costa County and two members of the Board; and it is by the Board further ordered that ex-officio members shall be a representative of the Association of Bay Area Governments, Bay Area Transportation Study Commission, Division of Highways, Bay Conservation and Development Commission, East Bay Regional Park District, Bay Area Rapid Transit District, and an additional member as may be appointed by the Policy Committee at its discretion; and

"It is by the Board further ordered that the bylaws of said committee, a copy of which are on file with the Clerk, are approved."

#### Technical Committee

This committee serves as an advisory committee to the study. It is intended to be a clearinghouse for evaluation of technical matters referred from the Study Policy Committee concerning land use and transportation planning, and to provide technical guidance to the study, assisting in evaluation of alternatives and priorities. It is also a formal medium for technical interchange on the staff level between the

cities and the County. It is composed of planning and engineering representatives of the cities in the County, the State Division of Highways, the State Council of Intergovernmental Relations, and the design professions practicing in the County.

#### Planner-In-Charge

The Planning Director of Contra Costa County has been designated as the Planner-In-Charge. The Planner-In-Charge has the responsibility for the direction and completion of the HUD-aided and related locally financed, planning phases of the County, and for the review and approval of HUD-aided expenditures made in carrying out the study.

#### The Study Coordinator

The Study Coordinator has been selected by the County Board of Supervisors. Located in the office of the County Administrator, he will work closely with the Study Policy Committee, the Citizens Advisory Committee, the Technical Committee, the Planner-In-Charge, the County Planning Department, the County Public Works Department and the consultant throughout the duration of the study.

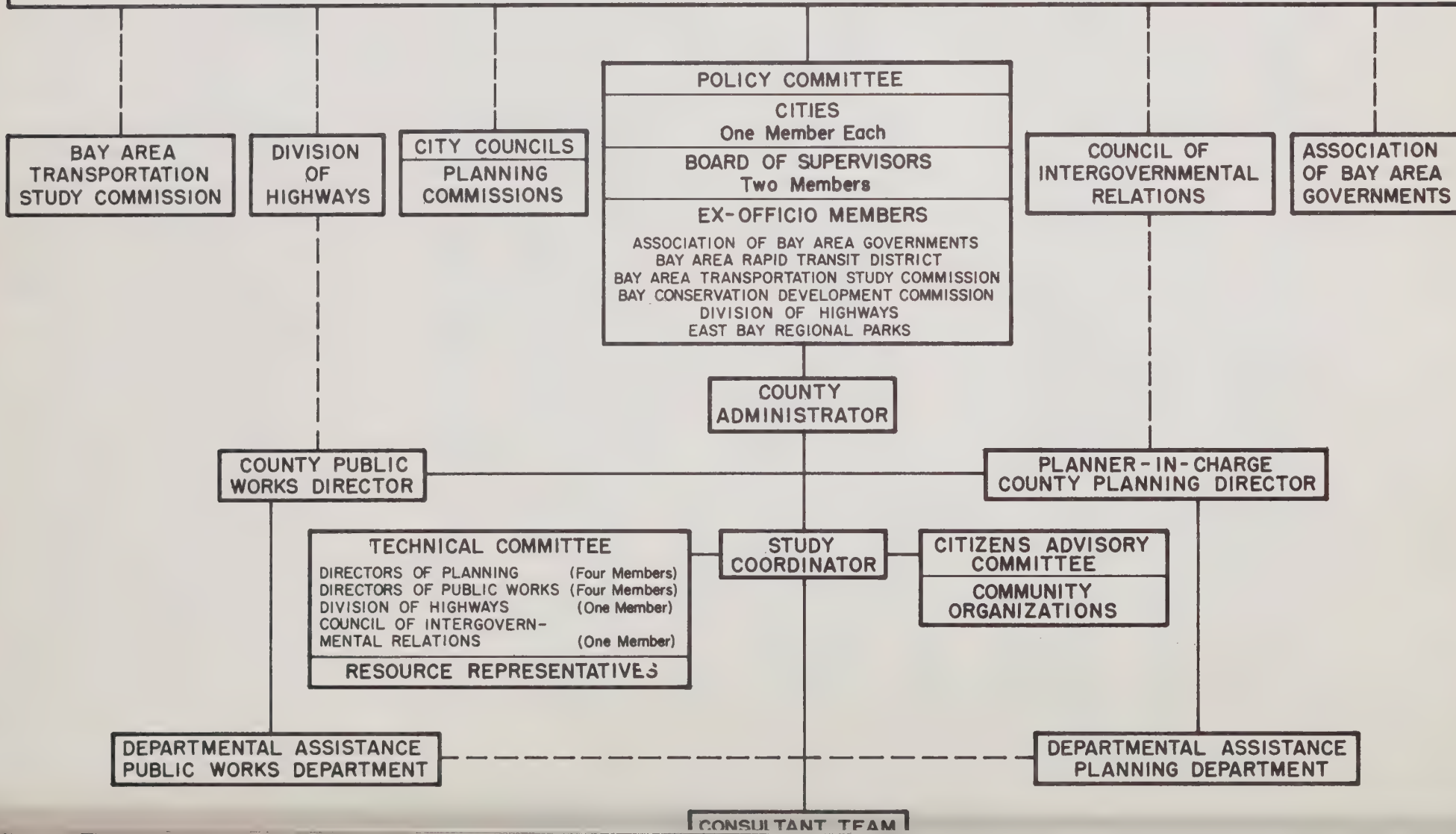
#### The Consultant

The prime consultant engaged by the County is Tudor Engineering Company of San Francisco. In addition to supplying its expertise to the elements of the study as indicated, it will lead and coordinate the efforts of a consultant team consisting of Livingston and Blayney, San Francisco, as city and regional planners; Stanford Research Institute, Menlo Park, California, as economic, demographic and systems analysts; Wilbur Smith and Associates, San Francisco, as traffic engineers; and Kennedy Engineers, San Francisco, as sanitation engineers.

BOARD OF SUPERVISORS  
PLANNING COMMISSION

# MEMORANDUM OF UNDERSTANDING

## CONTRACTS AND AGREEMENTS



## 2. Schedule

The principal factor controlling the five-year program work schedule is the desirability of preparing an interim transportation plan by July 1971.

It should be recognized that the schedule was prepared with the anticipation that certain data, in usable form, will be made available to the County by outside agencies. It should also be recognized that in the event it is found that the data to be furnished by outside agencies is not of a quality or form suitable for use in this Countywide study, the study design and schedule shall be restructured to obtain these data by other methods.

The projected schedule shown on Figure 2 shows the entire five-year work program. This schedule will be continually reviewed and modified as required.

One of the first major elements to be undertaken immediately after start of the study is the staffing study and analysis. This phase of the work program will enable the County and the consultant to determine staffing needs, primarily for the County Planning Department, for participation in the study. It is envisioned that the Planning Department will undertake the greater part of the general planning phases of the program beginning in the third year of the study thereby placing the consultant in a predominantly advisory role.

## 3. Budget and Financing

The estimated cost of the overall five-year program is \$1,580,000. Three sources of financing are available to underwrite the work within the five-year program. These include grants from the U. S. Department of Housing and Urban Development (HUD), the U. S. Department of Transportation, Federal Highway Administration, Bureau of Public Roads (BPR), and local matching funds.

Although HUD grants are available on a basis of \$2.00 of Federal money for each \$1.00 of local matching money, Contra Costa County is limited in the amount of grant available to it. Under the policy established by HUD, the maximum amount of grant available for Contra Costa County for any one year is \$120,000, with local matching funds of \$60,000 required for a total of \$180,000. This maximum amount is based on official population figures derived from the 1960 census. This maximum



amount will remain in effect until the population figures are revised by the 1970 census. The current population of the County is unofficially estimated at 530,000 persons. For the purposes of budgeting after 1970, an estimated population of 600,000 persons was used, and based on the current policy of HUD, the County's maximum allowable grant then would be \$160,000 with local matching funds of \$80,000 required, making a total of \$240,000 for any one year after the 1970 census data becomes available.

It is estimated that the County Planning Department will contribute approximately \$500,000 in services during the five-year study.

Table 1 presents the overall budget for the five-year program and the estimated duration of time in months to complete the various work components.

Under the current agreement between the California Division of Highways and Contra Costa County, dated February 28, 1968, BPR funds in the amount of \$70,000 are allocated to the study. Under the five-year program, the transportation element has been expanded to provide for a more comprehensive product costing \$260,000. It is proposed that an additional \$60,000 be allocated by the Division of Highways from BPR funds.

Table 2 presents the proposed participation by HUD, BPR, and Contra Costa County for the five-year program.

# LAND USE AND TRANSPORTATION STUDY

## CONTRA COSTA COUNTY, CALIFORNIA

TABLE 1 - BUDGET SUMMARY, WITH DURATION IN MONTHS

Work Component		BUDGET	DURATION
No.	Description	(\$1,000)	(Months)
1.	<u>General Administration and Support Activities</u>		
1-1:	Study Design and Review, and Work Component Description	58.6	Continuing
1-2:	Training of County Personnel	-	Continuing
1-3:	Meetings with Study Committees	26.5	Continuing
1-4:	Public Information Program	13.5	Continuing
1-5:	Staffing Study and Analysis	5	3
1-6:	Development of Goals, Policies and Criteria	1	Continuing
1-7:	Review and Analysis of County Mapping	3.5	3
1-8:	Preparation of County Base Map	2	6
2.	<u>Planning Information Systems</u>		
2-1:	Inventory and Evaluation of Existing Systems Capability	12.5	4
2-2:	Data Bank Design Study	49	5
2-3:	Testing and Implementing the Data Bank System	26	3
2-4:	System Operations	-	Continuing
3.	<u>Natural Resources</u>		
3-1:	Inventory and Evaluation of Available Information on Natural Resources	31	9
3-2:	Landscape Potential	19	4
3-3:	Refined General Plan: Mineral Resources Study	-	Deferred
3-4:	Refined General Plan: Natural Resources Study	18	6

Work Component		BUDGET	DURATION
No.	Description	(\$1,000)	(Months)
4.	<u>Population Analysis and Projection</u>		
4-1:	Identification and Evaluation of Existing Studies and Projections	11	3
4-2:	Distribution of Preliminary Population Estimates to Census Tracts	9.5	3
4-3:	Preparation of a Preliminary Forecasting System	6	3
4-4:	Preparation of Refined Plan Population Projections	22	5
5.	<u>Economic Analysis and Projections</u>		
5-1:	Identification and Evaluation of Existing Economic Studies and Information	10.5	3
5-2:	Development of Procedures and Making of Allocations to Census Tracts	11.5	3
5-3:	Development of the Planning and Forecasting System	7.5	3
5-4:	Employment Survey	20	6
5-5:	Refined General Plan: Preparation of Economic and Population Projection	43	6
5-6:	Fiscal Analysis	35	3
5-7:	Limited Capital Improvement Program	14	3
5-8:	Complete Capital Improvement Program	17	6
6.	<u>Land Use</u>		
6-1:	Inventory of Available Existing and Proposed Land Use Information	5	4
6-2:	Compilation and Allocation of Existing Data to Traffic Analysis Zones	29	5

Work Component		BUDGET	DURATION
No.	Description	(\$1,000)	(Months)
6.	<u>Land Use</u> (continued)		
6-3:	Analysis of Development Trends and Potentials	11.5	5
6-4:	Land Use Forecast	31	7
6-5:	Open Space and Agricultural Conservation Potentials	20	4
6-6:	Open Space Alternative Sketch Plans	18.5	7
6-7:	Land Use Alternative Sketch Plans	37	7
6-8:	Adjustment and Acceptance Studies of Land Use and Open Space Plans	15	4
6-9:	Land Use Plan Effectuation Studies	15	5
6-10:	Development of the Land Use Allocation Model	32	6
6-11:	Land Use Inventory Design	14	4
6-12:	Land Use Inventory	136	18
6-13:	Refined General Plan: Open Space Element	10.5	6
6-14:	Refined General Plan: Land Use Element	27.5	6
6-15:	Refined General Plan: Effectuation Study	13.5	6
6-16:	Transit Impact Study of Lafayette Station Area	25	5
6-17:	Development of Lafayette BART Station Area Plan	29	6
7.	<u>Community Facilities</u>		
7-1:	Inventory and Survey of Major Community Facilities	12	3
7-2:	Evaluation of Needs and Plans for Community Facilities	10	3
7-3:	Sketch Plan of Major Community Facilities	10	3
7-4:	Refined General Plan: Community Facilities Element	22	6



No.	Work Component - Description	BUDGET (\$1,000)	DURATION (Months)
8.	<u>Public Utilities</u>		
	8-1: Water	28	12
	8-2: Sewer	44	12
	8-3: Solid Wastes	21.5	6
9.	<u>Transportation Objectives and Criteria</u>		
	9-1: Formulation of Transportation System Objectives	6	3
	9-2: Establishment of Transportation System Criteria	6	3
10.	<u>Basic Transportation Data</u>		
	10-1: Development of Highway Inventory Manual	5	3
	10-2: Development of Transit Inventory Manual	4.5	3
	10-3: Inventory of Street and Highway Facilities	28	3
	10-4: Inventory of Transit Facilities	21	3
	10-5: Development of Traffic Zones	3.5	3
	10-6: Development of Street, Highway and Transit Base Year Network	7	3
11.	<u>Interim Transportation Plan</u>		
	11-1: Origin-Destination Analysis	17	5
	11-2: Development of Traffic Model	21	3
	11-3: Formulation of Alternate Interim Transportation Scheme	13.5	3
	11-4: Traffic Forecasts, 1980	16.5	3
	11-5: Selection of Optimum Interim Plan	15	6

Work Component		BUDGET	DURATION
No.	- Description	(\$1,000)	(Months)
12.	<u>Final Transportation Plan</u>		
	12-1: Review and Updating of Basic Transportation Data	9	5
	12-2: Refinement of Traffic Model	10	4
	12-3: Formulation of Alternate Final Transportation System Schemes	7.5	6
	12-4: Traffic Forecasts, 1990	14	3
	12-5: Selection of Optimum Final Transportation Plan	12	6
13.	<u>Scenic Route Plan</u>		
	13-1: Interim General Plan: Scenic Route Element	10	3
	13-2: Refined General Plan: Scenic Route Element	10	3
14.	<u>Airport Plan</u>	65	9
15.	<u>Housing Element</u>		
	15-1: Preliminary Housing Element	10	12
	15-2: Refined General Plan: Housing Element	10	Continuing
16.	<u>General Plan</u>		
	16-1: Revised Interim General Plan	16	6
	16-2: Refined General Plan	21	6
ESTIMATED EXPENDITURE THROUGH 9/30/68		28.4	
17.	<u>Miscellaneous</u>		
	17-1 Travel	5.7	
	17-2 Reproduction	43.8	
	17-3 Clerical	43.5	
	17-4 Other Department Support	5.5	
	17-5 Office Supplies	5	
TOTAL		1,580.0	

# LAND USE AND TRANSPORTATION STUDY

## CONTRA COSTA COUNTY, CALIFORNIA

TABLE 2 - PROPOSED PARTICIPATION, FOR FIVE-YEAR PROGRAM

Work Component No.	(Amounts shown in \$1,000)			
	HUD Aided Components		BPR Aided Components	
	HUD	- C. C. County	BPR	- C. C. County
1-1	36.07	18.03	2.25	2.25
1-2	-	-		
1-3	17.67	8.83		
1-4	9.0	4.5		
1-5	3.33	1.67		
1-6	0.67	0.33		
1-7	2.33	1.17		
1-8	-	-	1.0	1.0
2-1	8.33	4.17		
2-2	32.67	16.33		
2-3	17.33	8.67		
2-4	-	-		
3-1	20.67	10.33		
3-2	12.67	6.33		
3-3 (Deferred)	-	-		
3-4	12.0	6.0		
4-1	7.33	3.67		
4-2	6.33	3.17		
4-3	4.0	2.0		
4-4	14.67	7.33		
5-1	7.0	3.5		
5-2	7.67	3.83		
5-3	5.0	2.5		
5-4	13.33	6.67		
5-5	28.67	14.33		
5-6	23.33	11.67		
5-7	-	-	7.0	7.0
5-8	11.33	5.67		

Work Component No.	(Amounts shown in \$1,000)			
	HUD Aided Components		BPR Aided Components	
	HUD	- C. C. County	BPR	- C. C. County
6-1	3.33	1.67		
6-2	19.33	9.67		
6-3	7.67	3.83		
6-4	20.67	10.33		
6-5	13.33	6.67		
6-6	12.33	6.17		
6-7	24.67	12.33		
6-8	10.0	5.0		
6-9	10.0	5.0		
6-10	21.33	10.67		
6-11	9.33	4.67		
6-12	90.67	45.33		
6-13	7.0	3.5		
6-14	18.33	9.17		
6-15	9.0	4.5		
6-16	16.67	8.33		
6-17	19.33	9.67		
7-1	8.0	4.0		
7-2	6.67	3.33		
7-3	6.67	3.33		
7-4	14.67	7.33		
8-1	18.67	9.33		
8-2	29.33	14.67		
8-3	14.33	7.17		
9-1			3.0	3.0
9-2			3.0	3.0
10-1			2.5	2.5
10-2			2.25	2.25
10-3			14.0	14.0
10-4			10.5	10.5
10-5			1.75	1.75
10-6			3.5	3.5



Work Component No.	(Amounts shown in \$1,000)			
	HUD Aided Components		BPR Aided Components	
	HUD	- C. C. County	BPR	- C. C. County
11-1			8.5	8.5
11-2			10.5	10.5
11-3			6.75	6.75
11-4			8.25	8.25
11-5			7.5	7.5
12-1			4.5	4.5
12-2			5.0	5.0
12-3			3.75	3.75
12-4			7.0	7.0
12-5			6.0	6.0
13-1	6.67	3.33		
13-2	6.67	3.33		
14	43.33	21.67		
15-1	6.67	3.33		
15-2	6.67	3.33		
16-1	10.67	5.33		
16-2	14.0	7.0		
Estimated Expenditures Through 9/30/68	14.93	7.47	3.0	3.0
17-1	3.13	1.57	0.5	0.5
17-2	23.87	11.93	4.0	4.0
17-3	24.67	12.33	3.25	3.25
17-4	3.0	1.5	0.5	0.5
17-5	<u>3.0</u>	<u>1.5</u>	<u>0.25</u>	<u>0.25</u>
TOTAL	880.0	440.0	130.0	130.0



## FOR FIVE YEAR PROGRAM

[illegible]











### III. DESCRIPTION OF WORK COMPONENTS

#### SUMMARY

The study design prepared for the Contra Costa Land Use and Transportation Study is divided into sixteen sections and more than seventy separately identified and described work components. Descriptions of each work component, which are contained in the complete study design, together present a comprehensive view of each of the steps included in this study in order to develop (1) a revised interim general plan, at approximately the end of the third year of the study; (2) a refined general plan at the end of the fifth year of the study; (3) an implementation and effectuation program to translate the elements of the plan into specific action programs; (4) a planning information system that may be kept current and always up-to-date; and (5) a continuing planning process, utilizing the data system, that will enable the County periodically and frequently to revise the general plan, and particular elements of it, so that it may fully reflect changed conditions and new development and growth problems and needs.

#### 1. General Administration and Support Activities:

The components of the administrative and support activities section of the study include general programming, staffing, procedural and informational activities as well as basic background studies that will lead to the formulation and statement of goals, objectives and criteria, acceptable to the County, which will guide in part and be derived in part from other components of the study.

These include procedures for periodically reviewing the overall study design and for developing a detailed job description of each work component as the first step; for the training of county personnel for participation in the study at the outset, and in the techniques and methods established during the course of the study by the Consultant team so that there may be experienced continuity of staffing after the Consultant participation has ended; for meeting with established study committees to keep them informed of the status of the study, or specialized parts of it, and of trends, problems and solutions; for keeping members of the public advised and informed about the study and the issues with which it is concerned; and for reviewing the staff and organizational structure of the Planning and Public Works departments as they relate

to or are affected by the study and its recommendations. This latter study will be concerned both with departmental participation in the study from the outset and with departmental ability to implement the study findings at the end of the study.

Consideration of county goals, and subsequently of policies and criteria, will serve as a check on the fundamental objectives of the study and the direction which it follows. A review of mapping needs of the Planning Department will assure that both the study and the long-term continuous planning program are adequately served with essential types of mapping and aerial photography products and procedures.

## 2. Planning Information Systems

A properly developed and informed use of computer technology and the establishment of a data bank and procedures for keeping it current will enable the County to have readily retrievable and useful information pertaining to a great variety of development issues as a basis for decision making. The year 1970 is a key base year, for the decennial census will be taken, supplying population and economic data of great value in assessing planning needs and in developing practicable and realistic solutions which will be first used in formulating the revised general plan and its several elements.

This section is comprised of components which will inventory and evaluate existing data and its sources, and the present data systems capability of the County, which will design a computerized data bank, and which will test and then implement the system so developed, finally putting it into operation by the County.

## 3. Natural Resources

The fundamental natural resources of the County will be evaluated and the current knowledge of these resources will be assessed in relation to their existing or potential importance in shaping the plans and development of the County. The natural landscape and man-made townscape will be studied, and conclusions will be drawn concerning areas and priorities for conservation, enhancement, restoration or redevelopment based on aesthetic and ecological criteria. A special mineral resources study will be programmed to assist in the development of policy on the extraction and regulation of activities associated

therewith. These studies will be detailed in the later part of the study so that conclusions can be included in the refined general plan.

#### 4. Population Analysis and Projection

The revised interim general plan will be based on population information obtained from regional sources, based on the year 1965. All existing studies and projections of population will be studied and revised as deemed appropriate for the County level of concern. The projections, in the first phase of analysis, will be made by census tracts. A preliminary forecasting system will be developed for use in preparing the revised interim general plan. After the 1970 census data becomes available and is analyzed, new projections will be made for use in the economic analysis of the County and in the development of the refined general plan. A system for keeping estimates up to date and for preparing projections in the continuing planning program will be developed.

#### 5. Economic Analysis and Projection

For transportation studies and for the revised interim general plan economic growth of the County will be reviewed and projections for the County will be made. The projections, in the first phase of the study, will be allocated to census tracts, for subsequent allocation to smaller geographic units which will be used in land use and transportation studies. A forecasting model and system will be developed for use in formulating the refined general plan and for use in the continuing planning process thereafter. An employment survey will be made to provide information at a level and time period comparable to that derived from the 1970 census, indicating the number and kinds of jobs now existing in the County. The forecasting system will be refined for continuing use and projections of employment and income will be made by five-year intervals up to 1990.

Characteristics of the present and forecasted County economy will be described and analyzed, and their influence and impact upon development and planning will be identified. A fiscal analysis of the County will be made and projections of County revenues will be made for use in preparing a capital improvement program for the construction of public facilities and circulation improvements recommended by the revised general plan. A limited capital improvement program will



be developed for street and highway projects which are given a high priority in the revised interim general plan.

## 6. Land Use

Land use data obtained by regional agencies using 1965 as a base year will serve the basic data needs of the revised interim land use plan. For use in the refined land use plan a parcel inventory will be programmed and carried out, timed so that it will be comparable with and complementary to the 1970 census data. Land use projections, based on development trends and 1965 data, will be made for use in the revised interim land use plan formulation as well as for the traffic analysis to be carried out in formulating the interim transportation plan. Projections will be made for the refined plan based on the results of land use modeling techniques to be developed.

Special consideration will be given to open space and agricultural conservation needs and potentials. Alternative sketch plans, based on alternative policies posed for review and consideration, will be presented as a basis for selection of an open space plan and program. Similarly, alternative land use plans will be formulated for review and selection. Special studies of legal and administrative effectuation measures, in existence and needed, will be made to translate the interim revised land use plan and the refined land use plan into instruments of policy.

## 7. Community Facilities

A survey of existing and projected community facilities will be made, an evaluation of needed facilities and their locational and site requirements will be made, and a proposed community facilities element of the refined general plan will be developed. The level of facilities which will be included will be those which serve a community area or a larger area and have significant land requirements and traffic generating influences in the capital improvement program. This element will be an important base in the development of the capital improvement program.

## 8. Public Utilities

The public utilities phase of the study will produce water, sewerage, and solid waste disposal plans for inclusion as an element of the refined general plan of the County.

Existing water supply, sewage disposal, and solid waste disposal facilities will be inventoried. Pertinent data and previous studies available from the various utility service agencies within the County and other agencies whose activities relate to utility services will be reviewed and evaluated. A plan for each utility will be developed, related to the population projections and land use forecasts developed under other components of the study and to the land use element of the revised general plan. Cost analyses and recommended priorities will be used in the development of the capital improvement program, as appropriate.

9, 10, 11 and 12.      Transportation Plan

The transportation planning program of this study will be accomplished in two phases. The first phase will take three years of effort and will produce an interim transportation plan and program. The second phase will produce, at the end of the five-year duration of the study, a refined transportation plan which will be included as an element of the refined general plan for the County.

The interim transportation plan will be formulated around the future highway plan and will consider as its transit component the two rapid transit lines, now under construction through the County, supplemented by express-type bus transit services for areas not to be served initially by BART. The interim plan will be developed on the basis of analyses of available existing data on existing transportation systems, land use, and economic and population characteristics as developed by the County, each of the fourteen incorporated cities, the Bay Area Transportation Study Commission, the Bay Area Rapid Transit District, the Association of Bay Area Governments, and similar regional and local organizations.

Two transportation inventory manuals will be prepared during this first phase of the program, one for a street and highway inventory and the other for a transit inventory, to guide the data collection effort on transportation facilities in the most comprehensive and efficient manner. The two manuals will be used by County personnel in subsequent inventories or updating present ones. A thorough analysis of the existing transportation system characteristics will be conducted in order to detect the strengths and weaknesses of present facilities to be able to develop an optimum system. This analysis is also required for the functional and physical incorporation of existing facilities into the

optimum plan. Trip estimating techniques will be developed and calibrated, using data extracted from BATSC files, to forecast future volume and patterns of traffic on alternative transportation plans. An optimum interim transportation plan will be selected on the basis of its feasibility from the standpoint of cost, finances and functionality and on the basis of its compatibility with the development and transportation objectives of the County.

The final transportation plan will be guided by a set of more accurate, comprehensive and up-to-date data and projections, developed in the light of a detailed land use inventory to be conducted during the first phase of the study and the results of the 1970 census data. Based on policies developed for the final plans all of the data, methodology and techniques developed during the first phase of the study will be reviewed, refined and expanded to reflect as accurately as possible the changes that have occurred in the living and mobility habits of the inhabitants of the County during the Sixties. The final transportation plan will be an element of the refined general plan of the County.

As in other components of this study, County personnel will be as much involved in every aspect of the transportation study program as the consultant team. Not only will they carry out portions of the program, but also they will be prepared to implement the final program and conduct every phase of the planning process in their continuing planning efforts.

### 13. Scenic Route Plan

In conformance with legislative interest expressed by the State Legislature and by the Board of Supervisors a special study will be undertaken by the Planning Department to develop a plan of scenic routes. This plan will thread together into a system a series of routes that have exceptional scenic values and which serve recreational and park areas. The plan will be a basic plan for special enabling measures to preserve and enhance the scenic values of the areas traversed and of the system of routes.

### 14. Airport Plan

A plan for future aviation facilities within the County will be developed to enable the County to program developments to supplement Buchanan Field. An airport in Eastern Contra County and in the Richmond area, as well as airports in other areas suggested in the Federal

Aviation Administration National Airport Plan, will be included in the study and evaluation. Consideration will also be given to heliport, VTOL, and STOL requirements and potentials. The plan will be incorporated as an element of the revised general plan and the financial program and recommended priorities will be used in developing the capital improvement program.

15.     Housing Element

The provision of housing for all segments of the population is of major concern at all levels of government and in all segments of the housing industry. The County Planning Department, therefore, has been directed by the Legislature to formulate a housing element of the general plan. In addition, the 1968 Housing and Urban Development Act requires that "planning carried out with assistance under this section shall also include a housing element as part of the preparation of comprehensive land use plans...."

Initial steps in establishing guidelines and criteria will be undertaken at the beginning of the study. The major effort, however, will be carried out after the 1970 base-year data is available and projections have been made to the end that the refined general plan contain a complete housing element setting forth the needs and standards of housing required for the population of Contra Costa County.

16.     General Plan

A final product of the study as a whole will be a revised interim general plan for adoption, and a descriptive report thereon, at the end of the third year, and a more complete and extensive refined general plan for adoption, with a composite report describing the plan and its elements, at the end of the fifth year.

Inputs from all pertinent sections and components of the study will be compiled and correlated to compose the extended and revised comprehensive general plan. The interim revised plan will reflect the study results prior to the availability and use of 1970 census and land use inventory data and the completion of components dependent on such data. The refined general plan will be comprised of the plan elements developed in each of the sections of the study and will constitute a current County general plan in a form susceptible to ready revision and extension as decisions, developments, and future detailed studies indicate the need for modification.









### III - DESCRIPTION OF WORK COMPONENTS

#### 1. General Administration and Support Activities

##### 1-1: STUDY DESIGN REVIEW AND WORK COMPONENT DESCRIPTION

Purpose: The original study design and work program provided for an overall review of the study design and work program by the County and the Consultant at the beginning of the study in order to make modifications deemed appropriate in the light of current circumstances and conditions. Special attention was to be concentrated on the work components required in the first-year work program and on the establishment of budgets for each work component. Such a review was intended to be carried out periodically over the course of the study. The first comprehensive review has resulted in this revised and expanded study design. This study design should be reviewed, revised and updated on a periodic basis at least once each year.

In addition to this comprehensive type of review, however, it is necessary, in order that the study be carried out efficiently, with a clarity of purpose and responsibility, and with an appropriate relationship and timing of each study component, that a detailed work program be prepared for each study component before work commences on each component. The work program for each component should include a detailed description of the work to be done, a time schedule; a designation of responsibility, a cost estimate and budget allocation, and a clear statement of purpose, method, and final result or product.

Method: This document describes each component in the work program of the study. Work scheduled for earliest initiation, or presently under way, is described in a general manner and in the pattern intended for the detailed work program description to be prepared. Certain components of the study, however, cannot be fully described at this time as their scope and direction will depend upon the results of components not yet initiated or completed. Detailed work component descriptions will be prepared in the manner here described, and will be reviewed and mutually accepted by the County and the consultant.

Work Items: The detailed program descriptions for each study component, to be prepared as the first step in carrying out each



component, will:

1. Describe the general scope and content of the component or phase of work to be carried out in the particular program item;
2. Define and describe each of the jobs to be carried out within the component;
3. Describe individual jobs and the steps involved, and assign responsibility;
4. Estimate costs and recommended budget allocations;
5. Prepare a work schedule chart.

Final Product: The final product of each comprehensive study design description and review will be a document such as this presenting a general description of the purpose, methodology, content, and final product of each work program component.

The final product of each of the detailed work component descriptions will be a document setting forth in greater detail the purpose, method, work items, work schedule, cost and budget, specific responsibility, and final product of each work component.

As suggested in the foregoing, it is intended that the five-year study design program be reviewed and updated periodically to reflect any changes in requirements and priorities. The work program, after each review, should be extended so that it will again cover a five-year period and so that a minimum of three years of planning work is always charted ahead in the degree of detail indicated in this study design.

## 1. General Administration and Support Activities

### 1-2: TRAINING OF COUNTY PERSONNEL

Purpose: The Land Use and Transportation Study is intended to develop staff planning capabilities as well as to prepare the several plans and elements of the general plan described in this study design. Staff training, one aspect of capability development, is essential so that maximum use can be made of staff services in the course of the program, and the planning foundation laid by the initial five-year study program can evolve into an effective continuing planning program. The range, degree of sophistication, and methods and techniques to be utilized in the study components and in the continuing planning, make specialized staff training a prerequisite for staff participation in many instances.

Method: Three levels of staff training are applicable to the Land Use and Transportation Study. The first will consist of staff training of administrative personnel in the determination of the technical and procedural contents of the study design and of the detailed work programs of each component, by the consultants and administrative staff in conference. In the second type of training, concerned supervisory employees will be briefed and provided with appropriate directives by the consultants and administrative personnel, at the beginning of each new study or major step, to familiarize them with the nature of the work and its technical requirements. Staff efforts will be monitored to determine the need for additional guidance. Finally, formal courses of instruction will be developed to acquaint County staff members, particularly in the Planning and Public Works Departments, with those new skills required by the study program and the continuing planning program. The type of instruction may include in-service training with the firms of the consulting team.

#### Work Items:

1. Prepare a training description, and course outline if appropriate, as part of the detailed work program for each study component requiring staff training.
2. Conduct briefing sessions for County supervisory personnel, in accord with the training descriptions, and as necessary according to the results of the monitoring program.

3. Conduct instructional classes at appropriate times and places, in accord with training descriptions.
4. Provide in-service training with consultants as necessary.

Final Product: The final result is intended to be a County staff thoroughly familiar with the various activities to be included in the training program and capable of performing the tasks required by the study program and the continuing planning effort.

1. General Administration and Support Activities

1-3: MEETINGS WITH STUDY COMMITTEES

Purpose: Meetings of the study staff and consultants with study committees and other local jurisdictional bodies will provide local officials and interested citizen groups an opportunity to be informed of the status of the study, to be briefed on findings, to offer guidance, and to express opinions in regard to land development and transportation problems and issues confronting the County.

Method: Meetings with local jurisdictions include meetings of the staff and consultants with the Study Policy Committee, the County Board of Supervisors, city and County planning commissions, the Study Technical Committee and established citizen groups as referred by the Study Policy Committee.

Work Items:

1. Representatives from the County and consultant shall attend all regular meetings of the Policy and Technical Committees during the course of the study.
2. Attendance at meetings with other local officials and citizen groups will be scheduled when necessary for the effectiveness of the study.

Final Product: Periodic meetings with the study committee and other agencies will keep the members up-to-date on the progress of the study and will alert them to unforeseen problems and issues that may arise. In turn, keeping the members currently informed of progress will also expedite the review, acceptance and adoption of the plans and reports that will be developed as a part of the study.



1. General Administration and Support Activities

1-4: PUBLIC INFORMATION PROGRAM

Purpose: The broad scope of the Land Use and Transportation Study includes many components of concern to the citizens of Contra Costa County and to those who make policies and decisions affecting the growth and development of the County. To insure that the maximum value of the study is realized and that the recommendations of the study are translated into a successful implementation program, the public and elected officials must be kept fully informed of the study status, progress, findings and recommendations.

Method: An information program utilizing various media as appropriate will be organized and will function continuously during the entire period of the study. This program will disseminate information on the status of the study, issues being considered, and policies being formulated.

Work Items:

1. A quarterly newsletter will be published and distributed.
2. Special reports on work documents will be issued highlighting significant findings and items of special interest.
3. Summary reports at the completion of individual major work components will be published.
4. News media will be informed through personal contact, press releases and press conferences.
5. A speakers bureau will be organized for meetings with citizen and special interest groups.

Final Product: The final product will be an effective distribution of information concerning the study, which will make for an informed public and aid in the coordination of pertinent activities of agencies not directly involved in the study.

1. General Administration and Support Activities

1-5: STAFFING AND STUDY ANALYSIS

Purpose: So that the County departments may effectively participate in the study and subsequently implement its recommendations, it is essential that the departments involved be adequately organized and staffed. The purpose of this component is to evaluate the existing capabilities to perform the work assignments and volumes and meet the technical demands and administrative responsibilities required by the study, and will recommend appropriate arrangements. Inasmuch as the Planning and Public Works Departments are the primary participants, this component will be concerned primarily with their long-range planning functions. It is emphasized that this component is specifically limited to study-performance needs and not departmental organization in general.

Method: The consultant, in cooperation with the respective department heads, will perform the staff-organization study and analysis, and develop the recommendations described above. Conclusions and recommendations will be described in two principal technical reports. The first, issued early in the study, will enable the departments to budget and organize for participation as early as possible. The second, issued late in the study period, will pertain to continuing planning needs and capacity to implement study recommendations. In addition, technical memoranda will be issued as needed to account for revisions in study content or sequencing.

Work Items:

1. Survey existing departmental functions and organization relevant to the Land Use and Transportation Study and staff capabilities to perform them.
2. Assess above functions, organization, and staff capabilities in terms of adequacy and extent of commitment to the Land Use and Transportation Study.
3. Determine departmental staff and organizational requirements to carry out assignments, apply new methodologies, and assume new functions developed by the study.

4. Formulate resulting recommendations for revision in the organization and staffing of the departments involved in the study.

Final Product: The final product will be a series of technical reports and memoranda analyzing staff capabilities and the organization of the study-related functions of the County departments participating in the Land Use and Transportation Study, with recommendations for revisions in the departmental structure and staffing, as required, to serve both the needs of the study and of the study implementation.

1. General Administration and Support Activities

1-6: DEVELOPMENT OF GOALS, POLICIES AND CRITERIA

Purpose: The purpose of this study element is to formulate statements of generally held aspirations concerning the physical development pattern of the County and of the related social and economic factors on which it is based. Such a statement is a necessary base and focus of issues in the development of physical plans and development programs.

Method: A review of all stated goals made by the County, each of the cities in the County, and by the Association of Bay Area Governments in its Preliminary Regional Plan has been made. A comparative analysis has been made and disparities, conflicts and voids have been defined. These goal statements have been consolidated into an accepted statement of goals for the County. They will be reviewed, modified as necessary, and accepted by the Policy Committee and the Technical Committee for further use in this study and for consideration by the Board of Supervisors and all interested groups concerned with the purposes and progress of this countywide study. Revisions will be made as necessary during the course of the review process.

Policies for the study as a whole will be derived from each of the sections of the study as the appropriate work component leads to the establishment and acceptance of pertinent policies for each section. Together, they will contribute to a set of policy statements which will serve to guide the course of the study.

Criteria or standards, similarly, will be developed for each section of the study. When appropriate, they will be compiled into a set of generally applicable criteria which would be applicable to the study as a whole.

Work Items:

1. Subjects for which goals will be developed will be identified. (This step has been completed.)
2. Policy or goal statements contained in the County General Plan, the City General Plans and the ABAG Preliminary Regional Plan will be abstracted, reviewed compared and analyzed. (This step has been completed.)



3. Basic accepted goals will be reviewed and restated as necessary to conform with the revised study design objectives.
4. Policy review will be sought from the Technical Committee, the Policy Committee and other local officials and citizen groups, revisions will be made as necessary, and agreement will be sought on a guiding statement of goals for use in this study.
5. Policies formulated in each section of the study will be reviewed, revised, and compiled into a comprehensive statement of generally applicable policies for the study as a whole.
6. Criteria developed in each section of the study will be compiled into a set of generally applicable criteria and standards as appropriate.

Final Product: The final product will be a statement of goals, policies and criteria, and an explanatory report, reflecting the broad physical development policies of the cities and County.

1. General Administration and Support Activities

1-7: REVIEW AND ANALYSIS OF COUNTY MAPPING

Purpose: Complete, accurate, and up-to-date base maps at several scales are essential for county and city planning programs. Existing maps, and mapping now under way by the County, meet part, but not all, of this need. This work component is intended to guide the establishment of an integrated, complete short-range and long-range mapping and aerial photography program designed to meet unfilled needs of planning agencies within anticipated budgetary limitations.

Method:

1. A complete review will be made of all existing mapping and photography programmed or under way, together with anticipated completion dates.
2. Meetings will be held and memoranda exchanged with interested parties to arrive at a short-range and middle-range program for completing needed mapping, maintaining currency, and providing financing.
3. Close coordination will be maintained with work on the planning information system described in Section 2.

Work Items

1. Inventory mapping and photography, existing and proposed.
2. List uses to be made of mapping, grouped as mandatory or desirable.
3. List present responsibilities for mapping and present and potential budgets available.
4. Prepare tentative short-range and long-range photography and mapping recommendations.
5. Prepare outline for photography and mapping specifications and preliminary cost estimates.

Final Product: The final product will be a report with specific recommendations for a photography and mapping program to meet the County planning needs on a continuing basis.

1. General Administration and Support Activities

1-8: PREPARATION OF COUNTY BASE MAP

Purpose: The original prospectus provided for the development of a mapping program to produce maps at a scale of 1 inch equals 660 feet. A review of the mapping program currently being carried out by the County Public Works Department has revealed that the 660-foot scale maps will not be required. It has been concluded that a map of the County at a scale of 1 inch equals 6000 feet showing limited topographic features and contours should be prepared to be used as background maps for the study.

Method: Quadrangle maps prepared by the United States Geological Survey are being used as the basis for the background maps.

Work Items:

1. The United States Geological Survey, under contract to the County, is preparing the background information by photographic process.
2. Preparation of a countywide base map at a scale of 1" = 6000' using a scribe coding technique, showing county boundaries, city limit lines; major streets, highways, freeways and interchanges, railroads and rapid transit routes, major rivers, streams and reservoirs, and a contour overlay with intervals of 200 feet.

Final Product: The final product will provide the necessary County base map to be used in the study for all work components.









## 2. Planning Information Systems

### 2-1: INVENTORY AND EVALUATION OF EXISTING SYSTEMS CAPABILITY

Purpose: The purpose of this component is to determine the existing information-systems capability in the County. Also, the specific information needs of the growth models to be developed under Sections 4 and 5 of this study will be investigated in conjunction with the population, economic, land use and transportation analyses.

Method: Information-systems analysts will investigate the two aspects of planning information systems under consideration in this research phase. The first will be concerned with the character of data needed for effective planning. The objective will be to characterize and define the specific information required to support the growth models to be developed in Sections 6 and 11. The second concern will be with the inventory of the existing planning systems for supplying planning data required in the planning process, and systems for updating the data and evaluating their effectiveness relative to cost as components of the conceptualized planning information system.

The resources available to satisfy the information requirements, and consideration of quality, quantity and currency factors at significant time periods will be identified. Until the completion of the 1970 census and the detailed land use survey to be undertaken at that time, planning must be based on such available data as the Bay Area Transportation Study Commission 1965 inventories, the 1960 census, and files of the County Assessor. It is intended that most of the work leading to the development of the revised interim general plan will be completed before the 1970 census data becomes available. The interim plan initially developed will be refined subsequently as better and more current data become available.

Effort will be directed to the evaluation of data available at present which is pertinent to forecast times in order to identify the data source and statistics most appropriate at each time period.

#### Work Items:

1. Identify and inventory the current planning information requirements and data sources.



2. Inventory the existing information processing capability.
3. Evaluate the effectiveness of the existing system, the current information, and systems for updating information.

Final Product: Results of this research will be documented in a technical report as a data requirements specification and as an inventory of contributing support systems. A catalog of pertinent planning factors and statistics, identifying their appropriateness, availability, and source at specified time periods will be prepared.

## 2. Planning Information System

### 2-2: DATA BANK DESIGN STUDY

Purpose: The purpose of this phase of the planning systems study is to prepare a preliminary set of criteria, based in part on an identification of primary users and their requirements, and to design a data bank system to meet the specified criteria.

Method: This effort will be aimed at finding appropriate indices of land use, population, economics, and transportation factors, and in relating these to statistical data available in the time periods being considered. The additional data requirements imposed in the incorporation of indices and methods in the data bank will be defined and considered as a factor in system design. A major consideration will be the ability to update information periodically so that the Planning Department can keep a running check on growth and development occurring in the County.

The analysis will be concerned with the development of system technical performance criteria and the conceptualization of the design to satisfy these criteria. Time and cost constraints will be defined and alternative design approaches will be made to isolate those satisfying time-cost criteria. Trade-off studies will be conducted, and the best qualified system will be selected for development and performance tests. An implementation plan will be developed with milestones defined for cost and schedule monitoring.

#### Work Items:

1. Identify appropriate property, population, economic, transportation and public utilities indices.
2. Develop technical performance criteria.
3. Define time and cost constraints.
4. Select the best qualified system.
5. Prepare implementation plan.

Final Product: The final product will be a technical report describing the preliminary design of the data bank and a plan for implementing the data bank operations.

## 2. Planning Information Systems

### 2-3: TESTING AND IMPLEMENTING THE DATA BANK SYSTEM

Purpose: The purpose of this step is to test, on a pilot basis, the operation of the data bank and to prepare the final schedule for implementing the system.

Method: Test criteria and procedures will be developed and coordinated with information users and with the County data processing organization. The data bank will be initiated on a pilot basis and tested under real or realistic conditions to prove the design concept and the data adequacy. The file format and content will be modified as required to achieve an initial operational capability. Modification will be made as required to satisfy specified performance criteria, and an interim operational capability will be established. Operating procedures will be published for the instruction and guidance of data bank operators and users.

Evaluation of the system to a satisfactory state of technical performance will follow evaluation of the pilot model. Technical assistance and staff training will be provided to transfer operational and managerial responsibility to the County.

#### Work Items:

1. Coordinate criteria and procedures with information users and data processing unit.
2. Test design concept and data adequacy.
3. Modify file format and content as required to establish interim operational capability.
4. Prepare a manual of operating procedures.
5. Conduct staff training sessions.
6. Monitor the implementation of the system.

Final Product: The final product will be an operational data bank system and a procedures manual for operating the system.

## 2. Planning Information Systems

### 2-4: SYSTEM OPERATIONS

Purpose: The purpose of this component is to operate the system in support of County planning activities, as a necessary concluding step to the previous work components.

Method: On the basis of the pilot test and the implementation schedule prepared in Work Component 2-3, County personnel, with technical assistance as required, will operate the planning information system. As experience is gained, it will be possible to make further refinements in the system to improve its usefulness and efficiency. Periodic evaluations of system performance will be made to identify operational problems and implement suggested improvements.

#### Work Items:

1. Operate the information system as required.
2. Evaluate system performance.
3. Suggest and implement required improvements.

Final Product: An information system operating in support of County planning activities and a process for evaluating and improving system performance.









### 3. Natural Resources

#### 3-1: INVENTORY AND EVALUATION OF AVAILABLE INFORMATION ON NATURAL RESOURCES

Purpose: Data on topography, soil capabilities, geological factors, biota, water resources, flood hazards, and climate all are basic to any planning effort. In Contra Costa County most of the needed data exist but have not been assembled and evaluated. The purposes of this work component will be to assemble and analyze these data systematically, and to evaluate interrelationships and their impact on a desirable pattern of development. Where needed data does not exist, recommendations for securing it will be made.

Method: Data on all factors listed above will be collected and evaluated, and each item will be divided into categories at a suitable level of detail for planning purposes, and mapped on a series of overlays that will be used to determine the suitability and priority for development of land for various uses from an ecological point of view.

#### Work Items:

1. Assemble and evaluate available data.
2. Determine the need and means of obtaining data that are not available, i. e., field interviews or surveys, special studies by public agencies or others, and make recommendations for work items to be included in Work Component 3-4 (Refined General Plan - Natural Resources).
3. Map and otherwise organize data in form suitable for systematic analysis.

Final Product: The final product will be a map or series of maps and a technical report containing supporting documentation that will illustrate certain constraints on land use and transportation planning and that will point out opportunities to be grasped, particularly for the design of the open space element of the interim revised general plan.

### 3. Natural Resources

#### 3-2: LANDSCAPE POTENTIAL

Purpose: The purpose of this component is to evaluate the landscape of the County and its characteristics as a basis for formulating open space development, and other land use proposals.

Method: The aesthetic and ecological characteristics of the natural and man-made landscape of the County will be analyzed, and conclusions will be drawn concerning the features deemed sufficiently important to be preserved, enhanced, restored, or redeveloped.

#### Work Items:

1. Study data gathered in the natural resources inventory and evaluation (Component 3-1).
2. Conduct a visual survey of County, noting particularly the impact of various types of development on the landscape features. Map findings.
3. Interview representatives of groups interested in specialized landscape features, i. e., wetlands, grazing lands, park lands.
4. Study past and potential changes in ecology resulting from land use policies and practices.

Final Product: The final product will be a descriptive technical report and a map of areas which have a high priority for conservation, enhancement, restoration, or redevelopment, based on aesthetic and ecological criteria.

### 3. Natural Resources

#### 3-3: REFINED GENERAL PLAN MINERAL RESOURCES STUDY

Purpose: The purpose of this component is to determine the location and extent of known mineral resources in the County, and to evaluate the need for extraction in relation to market demand and the impact on other uses.

Method: The location and extent of sand and gravel deposits, existing and potential rock quarries, and other mineral resources, if any, will be studied to determine the probable demand for their exploitation. The impact of decisions to develop or not to develop these resources will be evaluated, together with possible ways of bringing conflicting needs into harmony.

#### Work Items:

1. Collect data on the location and extent of commercial mineral deposits.
2. Determine current and proposed developments of mineral deposits.
3. Study existing or potential use conflicts.
4. Study adequacy of regulations controlling mineral extraction.
5. Study potential re-use of mineral extraction sites.
6. Confer with operators of extractive industries.

Final Product: The final product will consist of a report containing recommendations on the management, regulation, and future development of each major known commercial mineral area, together with guidelines for County policy on the use of areas not specifically studied.

(Note: This component will be deferred in the five-year period of this study.)



### 3. Natural Resources

#### 3-4: REFINED GENERAL PLAN NATURAL RESOURCES STUDY

Purpose: The purpose of this component is to provide more detailed information on natural resources, which will have been identified in Work Component 3-1, for the preparation of the refined general plan. Other needs will have become apparent during the preparation of the interim revised general plan. Soils capabilities and geological hazards are subjects that can be identified with certainty as requiring more intensive study than Component 3-1 can provide.

Method: Field investigations and consultation with specialists will supplement information assembled earlier. Particular attention will be given to devising means of predicting development pressures and criteria for regulating development in critical locations.

#### Work Items:

1. Prepare detailed slope analyses for areas where development pressures exist or are anticipated.
2. Study and map soils capability as a basis for developing economically supportable criteria for regulating land use.
3. Study and map flood hazards and analyze possible means of alleviation as a basis for determining where areas should be kept in open use or whether aesthetically acceptable flood control measures should be proposed.
4. Study and map plant and wildlife ecology to determine the extent to which open space conservation is justified to preserve unique or particularly beneficial ecological systems.
5. Continue landscape potential studies initiated under Work Component 3-2; make use of additional information developed in work items above and develop proposals at the level of detail appropriate to the refined general plan.

6. Combining the findings of the work items in this component, establish criteria for type and location of development to be permitted in specific areas as determined by slope, geology, drainage, ecology, and landscape potential.

Final Product: The final product will consist of the mapping and documentation necessary to support the refined general plan proposals that are based on natural resources criteria.









#### 4. Population Analysis and Projection

##### 4-1: IDENTIFICATION AND EVALUATION OF EXISTING STUDIES AND PROJECTIONS

Purpose: Several major regional studies are either in progress or have recently been completed, including: the Bay Area Transportation Study, the Bay Area Simulation Study, the Bay-Delta Study, the San Francisco Bay Conservation and Development Plan, and the regional plan prepared by the Association of Bay Area Governments. Each of these studies has produced projections of population and economic growth for the County and each has developed a somewhat different data base for its analyses.

In order to avoid duplication of effort and to make maximum use of existing information, it will be necessary to understand the data base, content, methods and conclusions of each of these studies and reports. This step will provide a foundation for subsequent population work components.

Method: A comparative analysis of the population components of these studies will be made and their implications for Contra Costa County will be evaluated in terms of assumptions, data quality, and projection methods, and the reasons for differences in their results will be determined. Variables will include, for example, age and sex distribution, and household and family characteristics.

A second major source of existing information will be the general plans prepared by the individual cities throughout the County. Many of these plans contain analyses and projections for cities and small areas and could play a key role in the analytical process of allocating county-wide control totals to census tracts throughout the County.

In addition, recent information on vital statistics for Contra Costa County will be collected and analyzed as a part of the analysis of population growth factors. The three key variables in this analysis are births, deaths and net migration for the County. This information will be used to evaluate the population projections prepared by other agencies and to revise the projections for use in the preliminary interim plan.

Work Items:

1. Assemble data and reports from regional and local planning and development programs.
2. Analyze and compare procedures and conclusions of these reports.
3. Assemble and analyze data on vital statistics.
4. Prepare a preliminary estimate of County population control totals.

Final Product: The final product will be a preliminary estimate and projection to 1980 of the total population growth, based on an evaluation of existing projections for Contra Costa County, for use in the preliminary allocation of population to census tracts.

#### 4. Population Analysis and Projection

##### 4-2: DISTRIBUTION OF PRELIMINARY POPULATION ESTIMATES AND PROJECTIONS TO CENSUS TRACTS

Purpose: The traffic model used in the transportation planning process (Component 11-2) requires specific data inputs for small areas throughout the County. Therefore, it is necessary first to distribute the estimates of overall population growth in the County to census tracts.

Method: A procedure will be developed to allocate the population projections. The data base developed by BATSC for the year 1965 will be used as the starting point in this analysis. Base-year data for 1965 and projections of population and selected characteristics are available by BATSC traffic zones for Contra Costa County. Since the BATSC traffic zones are aggregates of census tracts, the data for these zones will have to be reduced further to satisfy the needs of this study for census tract data. Demographic variables available from this source that require further geographic disaggregation include population density, average family size and population by type of residence, i.e., single-family, multi-family. These data will later be combined with economic variables such as income and employment to produce the information required for the traffic generation model. The BATSC land use data and local planning reports also will be used in the allocation process.

##### Work Items:

1. Obtain necessary land use data from Work Component 6-1.
2. Analyze alternative methods for making census tract allocations.
3. Prepare census tract allocations.

Final Product: The final product will be a set of base year population allocations and preliminary 1980 population forecasts by census tract for further disaggregation and allocation by traffic analysis zones under Work Component 6-4 and for use as an input to the traffic projection model and the land use allocation model.

#### 4. Population Analysis and Projection

##### 4-3: PREPARATION OF A PRELIMINARY FORECASTING SYSTEM

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Purpose: An essential part of the revised interim general plan effort will be the design of a population forecasting system. This system will become an integral part of the continuing planning program of the Planning Department and facilitate the periodic revision of County population estimates.

Method: Various methods of population forecasting have been developed. The application of these methods to the specific needs will be investigated and the appropriate method will be selected for further development.

The forecasting system could take the form of a cohort survival model in which assumptions on births, deaths, and migration can be made explicit and the implications of variations in these rates can be analyzed. This model also produces detailed information on the age distribution of the population and can be converted readily to estimates of households, family size and characteristics. This information can also be used as a check on employment-based population projections produced through the economic and employment analysis. Other possible forms of the projection system will be evaluated and tailored to the specific needs of the County planning program.

The precise data required to implement the forecasting system will be determined. In this way it will be possible to specify in advance the need for any special tabulations or unpublished data available from the Bureau of the Census and to program this data into the County forecasting system.

##### Work Items:

1. Explore alternative forecasting systems.
2. Select and develop the most appropriate system.
3. Develop data requirements for operating the system.

Final Product: The final product of this step will be the preliminary design of a forecasting system for producing control totals of population and selected characteristics.

#### 4. Population Analysis and Projection

##### 4-4: PREPARATION OF REFINED PLAN POPULATION PROJECTIONS

Purpose: The purpose of this component is to provide a system for preparing population forecasts and to prepare population forecasts for input to the population and economic allocation model, for use in developing the refined general plan.

Method: The 1970 census will provide the data for a detailed analysis of the characteristics of the population. Trends in these characteristics, such as family size and composition, race, sex, and age distribution, over the twenty-year period from 1950 to 1970 in the County and relative to the Bay Area can be analyzed and used as a basis for projecting further changes in the population to 1990.

The data from the 1970 census also will be used to refine the forecasting system developed in Work Component 4-3 and to produce the overall population forecasts for the County for the refined general plan. The projections produced through the economic analysis carried out in Section 5 and a final set of projections will be prepared. The countywide totals will be distributed to small areas of the County by use of the allocation model which will be developed as a part of the economic analysis described in Section 5.

##### Work Items:

1. Obtain required data from the 1970 census.
2. Analyze the changes in the population characteristics of Contra Costa County, including age and sex distributions, family size and characteristics, etc.
3. Finalize the design of the population forecasting system.
4. Prepare final projections of the total population and its characteristics.

Final Product: The final product of the demographic analysis will consist of (1) a refined set of population projections to be used in conjunction with the economic analysis in preparing the refined general plan, and (2) a system for keeping the estimates up to date and for preparing projections as required in the ongoing County planning program.









5. Economic Analysis and Projection

5-1: IDENTIFICATION AND EVALUATION OF  
EXISTING ECONOMIC STUDIES AND INFORMATION

Purpose: The purpose of this component is to produce preliminary control totals of economic growth in terms of future employment and income in the County, and to provide a foundation for subsequent components in this economic series.

Method: The method of approach will be a comparative analysis of the various special and regional studies that have been made since 1965. Factors to be analyzed include (1) data base, (2) assumptions, (3) methods, (4) indices such as employment rates, income per capita, and labor force participation, and (5) conclusions. Reasons for differences in results will be determined.

In addition, an effort will be made to identify new sources of information that would assist in making the evaluation.

Work Items:

1. Compile economic reports and data.
2. Carry out comparative analysis.
3. Identify and evaluate any new sources of data.
4. Prepare interim forecasts of County control totals of employment and income.

Final Product: The final product will be a set of economic projections for use in preparing the interim general plan and as an input to the allocation model.

## 5. Economic Analysis and Projections

### 5-2: DEVELOPMENT OF PROCEDURES AND MAKING OF ALLOCATIONS TO CENSUS TRACTS

Purpose: The purpose of this component is to provide data inputs to the land use allocation model and the interim revised general plan in the form of census tract projections of employment, income, households and selected household characteristics.

Method: The method will be based on existing data on the distribution of employment by two digit SIC number for census tracts available from BATSC. The base year for this data is 1965. Projections have been made at five-year intervals to 1990 for the 35 BATSC traffic zones in the County. As indicated previously, the BATSC traffic zones are aggregates of census tracts. Therefore it will be necessary to disaggregate these estimates and projections to the census tract level. The same step will be necessary for projections of median income. A procedure for disaggregation will be developed and used to prepare estimates of employment and income by census tract. A key data input to this analysis will be the 1965 land use data from BATSC and information obtained from individual city or area plans and projections. This distribution will be compared with distributions projected by other study efforts such as the Bay Area Simulation Study.

An effort will be made to identify additional data sources that might provide either new or updated information on employment and economic conditions in the County. On the basis of the evaluation of existing studies and any new information available, the existing projections of County totals and of tracts will be modified as appropriate to take into account identifiable changing conditions in the County and the results of the population analysis conducted as a part of this study. The format for these projections will be designed for input to the traffic projection and the land use analysis being conducted as part of this program.

#### Work Items:

1. Assemble the required economic data, and the land use data being developed in Section 6.
2. Identify any new sources of data that would be of use in making the allocations.



3. Develop a procedure and make the allocation.

Final Product: The final product will be a set of estimates and projections by census tract for further allocation to traffic analysis zones under Work Component 6-4, for use in the interim plan and in the trip generation model developed in Work Component 11-2.

## 5. Economic Analysis and Projection

### 5-3: DEVELOPMENT OF THE PLANNING AND FORECASTING SYSTEM

Purpose: The purpose of this component is to prepare a preliminary forecasting model for use in preparing data inputs to the refined general plan and for use in the continuous planning process of the County.

Method: Through a review of the literature and the experiences of the consultant, alternative forecasting systems will be identified and the one most appropriate to the needs of the County will be selected for further development and adaptation.

This effort will be carried out in conjunction with the development of the planning information systems in Section 2 of this study. Data requirements and sources for implementing the system will be identified. The need for special tabulations and for unpublished data available from the census will be determined and arrangements made for obtaining the data as soon as it becomes available. Also, the need for special studies of specific economic sectors will be determined and provisions made for conducting them.

The forecasting system will include an employment and population allocation model to distribute employment and population totals to census tracts in the County. This model will be integrated with the land use forecasting system being developed as a part of Section 6 of this study. The standard model for this purpose generally proceeds by first allocating basic employment to census tracts on the basis of existing developments, land availability, site requirements, and unique locational requirements. Next, population related to basic employment will be allocated to the tracts. Finally, population serving employment and its related population will be allocated to the tracts. The specific details of the allocation model will be a part of the research program.

No effort will be made to implement the forecasting system until data becomes available from the 1970 census and from the special employment survey to be carried out under Work Component 5-4.

#### Work Items:

1. Conduct review of the literature and state of the art.

2. Select appropriate system for development and adaptation.
3. Specify data requirements for operating the system.
4. Conduct staff training sessions.

Final Product: The final product will be the preliminary design of an economic forecasting system, a report describing the system, and the data required to operate it.

5. Economic Analysis and Projection

5-4: EMPLOYMENT SURVEY

Purpose: The purpose of this step is to provide up-to-date information on the distribution of jobs in Contra Costa County on a basis comparable to the 1970 census. This data will be essential in implementing the population and economic forecasting and allocation system used in preparing the refined general plan.

Method: Through County auspices, employment data will be obtained from the State Department of Employment and coded to detailed location in the study area. Supplementary information on uncovered employment will be developed and added to the data received from the Department of Employment. In some cases it will be necessary to make special allocations of jobs to small areas for companies that report all of their employment at a single location.

Work Items:

1. Obtain data from Department of Employment.
2. Obtain data on uncovered employment.
3. Prepare a master list of major work locations for controlling the employment coding process and a list of firms operating from multiple locations.
4. Code employment to selected geographic area.

Final Product: The final product will be a tabulation of jobs by census tracts by two digit SIC numbers.

## 5. Economic Analysis and Projection

### 5-5: REFINED GENERAL PLAN: PREPARATION OF ECONOMIC AND POPULATION PROJECTION

Purpose: To prepare a final set of data inputs to the refined general plan and to refine the forecasting system for continuous use by the County Planning Department.

Method: The 1970 census and the special employment survey will provide the data base for implementing the model designed as a part of Work Component 5-3. Changes in the patterns of economic development in Contra Costa County during the twenty-year period from 1950 to 1970, including income, employment by sector, labor force characteristics, and commuting and migration patterns, will be analyzed and the historical economic relationship of Contra Costa County to the remainder of San Francisco Bay Area will be established. This trend analysis will provide a historical basis for projecting for Contra Costa County its prospective share of the economic growth of the Bay Area and to some extent, the state and nation. The economic relationship of Contra Costa County to the remainder of the Bay Area, particularly San Francisco, is important because of the potential expansion of the San Francisco job market due to the completion of the BART system and its impact on commuting from the County to jobs in San Francisco. These data will be used to project control totals of employment by industry sector for the County as a whole. Projections will be made by two-digit SIC number. Since the land use classification will be based on a similar coding system, employment totals can be translated into future land use requirements.

The projections of employment for the County will be converted to population forecasts using labor force participation rates and other variables to make the conversion. These population projections will then be integrated with the projections produced as a part of the demographic analysis made in Section 4 and a final set of projections will be prepared for use in the refined general plan.

The economic analysis will also produce projections of household income as an input to the traffic analysis and projection being prepared as a part of the overall program.



These forecasting models, or systems, will be developed for use by the County in the continuing planning program. Operation of the model will depend, of course, on the successful implementation of the planning information system developed as a part of Section 2 of this study.

Work Items:

1. Obtain required information from the Bureau of the Census.
2. Conduct an economic trend analysis.
3. Test and refine the forecasting and allocation models developed, using the 1970 census and the employment survey as the data base.
4. Prepare final projections of countywide control totals.
5. Make final allocation to census tracts.
6. Conduct staff training sessions.
7. Write a final report on the population and economic analysis.

Final Product: The final product of the economic analysis will include:

1. Countywide projections of total population by five-year intervals up to 1990, population density per gross acre, average family size, population by type of residence, single- or multiple-family, income for single- and multi-family residences, and employment by type of employment.
2. Allocation of the above variables to census tracts.
3. An operational economic forecasting system for use by the County Planning Department in its continuing planning program.

5. Economic Analysis and Projection

5-6: FISCAL ANALYSIS

Purpose: The purpose of this component is to develop a data base and to carry out an analysis of fiscal problems and resources and projections of fiscal resources for use in preparing the capital improvement program.

Method: Information will be collected on the historical and current pattern of revenues and expenditures including the identification of sources of revenue and purpose of expenditures. Current and potential fiscal problems will be identified and the potentials and limitations of existing revenue sources will be determined.

A projection of expenditures and potential revenue, based on historical trends and on the forecasted economic development of the County, will be prepared. This projection will provide specific data inputs required for preparing the capital improvement program for the County.

Work Items:

1. Collect and assemble current and historical data on revenue sources and expenditures.
2. Determine current and potential fiscal problems.
3. Project revenue potential and limitations with respect to selected items in the capital improvement program.

Final Product: The final product of this analysis will be a set of revenue projections for use in preparing the capital improvement program. Recommendations for specific studies of new potential sources of revenue also may be made, if warranted.

5. Economic Analysis and Projection

5-7: LIMITED CAPITAL IMPROVEMENT PROGRAM

Purpose: To develop a limited capital improvement program for streets and highways, based on the transportation element of the interim revised general plan.

Method: As this element is considered of special overriding importance, cost estimates of land, right-of-way, and construction or improvements will be developed for the projects which are given the highest priority rating at the time the revised interim general plan is developed. Available County funding will be determined, and pertinent state and federal assistance programs available will be assessed. Application procedures will be recommended, if deemed appropriate. Full consideration will be given to general obligation bond financing, and the appropriate size, extent and timing of a bond issue proposal or proposals will be developed.

Work Items:

1. Develop cost estimates of priority projects for streets and highways.
2. Review available County funding resources.
3. Review state and federal assistance programs and determine their relative applicability to the needs of Contra Costa County.
4. Initiate application steps where appropriate.
5. Consider need for bond financing, and develop proposals, if appropriate.

Final Product: The final product will be a financing and expenditure program for street and highway improvements covering a six-year period beginning with fiscal 1972.

## 5. Economic Analysis and Projection

### 5-8: COMPLETE CAPITAL IMPROVEMENT PROGRAM

Purpose: The purpose of this component is to develop a complete capital improvement program for all capital expenditures of the County, based on the refined general plan, and a procedure for maintaining and revising the program on an annual basis.

Method: A capital improvement program procedure will be developed and a countywide capital budget will be developed based on the refined general plan. Financial resources of the County available for the various types of capital improvements recommended by the refined general plan will be evaluated. Cost estimates of the improvements contained in the various elements will be established for those having highest priority. Criteria will be established for weighing the relative overall priority of the various types of facilities. State and federal assistance programs will be evaluated for pertinence, applicability, and availability by time periods. Bonding capacity of the County, and feasibility of revenue financing for appropriate types of facilities, will be evaluated. Consultation with all affected departments and agencies will be carried out to the end that a feasible, balanced and generally acceptable program for capital expenditures be developed.

#### Work Items:

1. Examine financial resources of the County.
2. Develop cost estimates for highest priority projects in all elements of the refined general plan.
3. Establish criteria for establishing the overall priority of each project in relation to the total number and variety of types.
4. Evaluate the bonding capacity of the County, and the feasibility of revenue bond financing for appropriate facilities.
5. Consult with all affected or concerned departments or agencies.

6. Evaluate state and federal assistance programs for pertinence and availability.
7. Conduct County staff training sessions in the purposes, methods and procedures for establishing a capital budget and capital improvement programming procedure.

Final Product: The final product will be a capital improvement program for a six-year period following completion of the refined general plan, and a procedure for revising and maintaining a capital improvement program on an annual basis.







## 6. Land Use

### 6-1: INVENTORY OF AVAILABLE EXISTING AND PROPOSED LAND USE INFORMATION

Purpose: The purpose of this component is to determine the availability, reliability, and adequacy of BATSC 1965 land use inventory which is intended to serve in the development of interim plans; to devise a framework for analysis of the existing general plans and other land use proposals; and describe options for the analysis, allocation, and projection of land use.

Method: Available data will be evaluated and a determination will be made of the appropriate level of detail to be sought for use in developing an interim land use plan prior to the time that the new land use information system becomes operational. Land use data needs for future steps in the planning program will be identified.

#### Work Items:

1. Obtain data.
2. Determine classification problems and aggregate or disaggregate existing information and proposals to the appropriate level of detail.
3. Prescribe procedure for preparation of data to be used in developing the interim revised general plan.
4. Identify problems in the use of available data and desirable standards and procedures for subsequent steps in the study.
5. Review and revise as necessary the system of geographic units such as the presently used County planning areas, which are to be used in the study for the compilation of data and for the presentation of planning proposals.

Final Product: The final product will be a manual prescribing the procedure for converting existing and proposed land use data to a form suitable for comparison with BATSC or BASS land use projections as modified by work in Sections 4 and 5, together with an outline of methodology options for the collection and use of land use data for subsequent steps in the study.

## 6. Land Use

### 6-2: COMPILATION AND ALLOCATION OF EXISTING DATA TO TRAFFIC ANALYSIS ZONES

Purpose: The purpose of this component is to put the best available existing and proposed land use data and condition of structures data in a form suitable for subsequent planning work, and to allocate existing land use, population, and economic data to traffic analysis zones.

Method: BATSC data and general plan proposals will be converted to smaller units, as prescribed in Work Components 6-1 and 10-5. Available data on condition of structures will be obtained and analyzed.

#### Work Items:

1. Classify existing and proposed land use data in the form determined in Work Component 6-1.
2. Allocate 1965 land use data and 1965 economic and population inputs needed for the traffic model from the 96 census tracts provided in Section 5, to the 500  $\pm$  traffic analysis zones established in Work Component 10-5.
3. Develop a broad condition of structure classification system from 1960 census data and existing local surveys.
4. Map and tabulate data for areas not previously mapped by the County.

Final Product: The final product will be a compilation of existing and proposed land use data in forms suitable for use in subsequent planning steps and in the traffic model, and for comparison with BATSC or BASS land use projections as modified in Section 5, and a compilation of condition of structures data in a form suitable to serve as a basis for decisions about the future development pattern.

6. Land Use

6-3: ANALYSIS OF DEVELOPMENT TRENDS AND  
POTENTIALS

Purpose: The purpose of this component is to determine probable and possible alternative development patterns, using existing and proposed land use patterns, inputs from natural resources studies, recent development trends, and the results of the demographic and economic analyses conducted in Sections 4 and 5.

Method: This step is envisioned as a broad evaluation of trends and possible alternatives in order to identify the pressure points that will require detailed study and which will be instrumental in developing land use proposals. It will serve primarily as an input to Work Component 6-4.

Work Items:

1. By checking zoning changes, land sales, subdivisions, building permits, retail sales and employment data, and institutional development, determine trends since the 1965 base year by geographic units to be determined on the basis of data availability and the significance of variations.
2. Analyze existing development patterns and land use potentials to determine where development is likely to occur.
3. Map development trends and potential alternatives.

Final Product: The final product and result will consist of working documents and knowledge of development trends that will permit evaluation and re-allocation of BATSC or BASS land use projections, as modified, to smaller areas.



6. Land Use

6-4: LAND USE FORECAST

Purpose: The purpose of this component is to map and tabulate the land use pattern that will result if present development policies and expected major economic forces prevail in the future. It will be used for the interim plan development and as a check against the land use model to be prepared under Work Component 6-10.

Method: Economic data derived from Section 5 will be allocated to the smaller traffic analysis zones developed for this study, using results of the natural resources studies made in Section 3 and of the analysis of development trends and potentials made in Work Component 6-3.

Work Items:

1. Obtain or measure land development potential in 500 ± traffic analysis zones.
2. Allocate economic and population inputs needed for the traffic model from the 96 census tracts to the 500 ± traffic analysis zones in 1980 and 1990.
3. Where the fit is poor, re-allocate as indicated by the resources studies and the analysis of development trends and potentials.
4. Present results in map and tabular form.

Final Product: The final product will be an alternative land use element for the interim revised general plan based on a projection of present trends.

6. Land Use

6-5: OPEN SPACE AND AGRICULTURAL  
CONSERVATION POTENTIALS

Purpose: The purpose of this component is to determine the suitability of lands for preservation in various open space uses and the general magnitude of economic problems involved.

Method: Based on agricultural productivity, aesthetic qualities, and other findings of Work Component 3-1, and results of Work Component 6-4, a framework for making decisions on lands to be retained as open space will be devised.

Work Items:

1. Establish categories of open space use, aggregating to those employed by Bay Area regional open space studies.
2. Inventory public and permanent or semi-permanent private open space lands and review plans and programs of operating agencies.
3. Evaluate the County agricultural land conservation program.
4. Delineate lands suited for permanent open space by type of open space use.
5. Estimate the approximate cost of retention, using alternate means of regulation including preferential assessment or tax deferral, purchase of fee or interest less than fee, purchase and lease or sale back, and regulation with or without compensation.
6. Make assumptions about governmental agencies likely to be charged with open space preservation.
7. Apply assumptions about the most feasible means of retention of major open space areas.
8. Estimate the economic impact on the County of conserving each type of open space by each feasible method, quantifying the costs and benefits where possible.

Final Product: The final product will be a map showing potential open space lands by use, together with a report on the proposed method and cost of purchase or regulation if land were to be retained as open space, and the economic impact on the County.

6. Land Use

6-6: OPEN SPACE ALTERNATIVE SKETCH PLANS

Purpose: The purpose of this component is to identify alternative open space systems based on alternative objectives and assumptions about financial support likely to be available and regulatory measures to be used, building on the previous step and in conjunction with the preparation of land use alternative sketch plans as described in Work Component 6-7.

Method: Alternative plans will be prepared, and their potential for success in achieving alternative objectives such as maintenance of maximum agricultural income, attainment of maximum urban compaction, and the preservation of the present low-density urban character of much of the County, will be evaluated.

Work Items:

1. Select alternative objectives on the basis of Policy Committee recommendations, and feasibility of attainment.
2. Design alternative plans and coordinate them with land use, community facilities, and transportation proposals.
3. Evaluate plans to determine the degree to which objectives could be attained and to assay the social and monetary costs, public and private, associated with each alternate.
4. Assist the Policy Committee in reaching decisions on priorities of objectives.

Final Product: The final product will consist of a set of alternative plans and supporting text reflecting attainable objectives and quantified as to cost and impact on environmental quality.

6. Land Use

6-7: LAND USE ALTERNATIVE SKETCH PLANS

Purpose: The purpose of this component is to indicate the options open to the County and city governments, depending on public decisions about open space, residential densities and types, and quantities and types of economic development to be sought.

Method: Alternative plans keyed to the alternative open space plans will be prepared, and their potential for success in achieving alternative objectives will be evaluated in addition to those considered by the alternative open space plans. Possible alternative objectives include maximum industrial development, high-density residential development along the rapid transit corridor, acceleration of urbanization in the eastern portion of the County, and minimum transportation costs.

Work Items:

1. Select alternative objectives on the basis of Policy Committee recommendations and feasibility of attainment.
2. Design alternative plans; coordinate them with transportation proposals and test their feasibility.
3. Evaluate plans to determine the extent to which objectives could be attained and the social and economic costs, public and private, associated with each alternative.
4. Assist the Policy Committee in reaching decisions on priorities of objectives.

Final Product: The final product will consist of alternative land use plans reflecting attainable objectives, with evaluations of their positive and negative effects on achieving these goals.



6. Land Use

6-8: ADJUSTMENT AND ACCEPTANCE STUDIES  
OF LAND USE AND OPEN SPACE PLANS

Purpose: The purpose of this component is to coordinate and adjust the land use and open space elements to meet transportation needs and to maximize the attainment of as many of the objectives of the County as possible.

Method: This component will consist of public meetings with the Policy Committee and other groups at which the study team staff will indicate the consequences of various choices and point out conflicts. The alternatives will be narrowed, and the one resulting plan will be further refined on the basis of transportation proposals developed in Section 11.

Work Items:

1. Preparation of recommendations for the resolution of conflicting objectives.
2. Elimination of alternatives and adjustment of the plan.
3. Refinement of the plan as necessary for traffic studies.
4. Compilation of traffic model inputs.
5. Revision of the plan as indicated by transportation proposals resulting from traffic model output.

Final Product: The final product will be the most acceptable interim revised land use element of the general plan, together with supporting documentation.

6. Land Use

6-9: LAND USE PLAN EFFECTUATION STUDIES

Purpose: Having agreed upon an interim revised general plan, it is appropriate that existing legal and administrative tools to guide development be inventoried and evaluated to determine what modifications and new devices are needed to carry out the plan. This component will form a basis for detailed recommendations on effectuation to be prepared in conjunction with the refined general plan.

Method: Evaluate the adequacy of present public regulations and programs to carry out the proposals of the interim revised general plan, and determine the general extent of changes needed. Attention will be focused on County programs and regulations, but city policies also will be studied to evaluate their impact on the proposals contained in the plan.

Work Items:

1. Review zoning regulations and general policies on the application and administration of zoning.
2. Review the County setback plan program accomplishments and potentials.
3. Review subdivision regulations and administrative policies, with particular attention to their impact on natural land forms and the preservation of open space.
4. Review public open space acquisition and development policies and financing.
5. Review existing legislation intended to preserve non-park open space and its applicability and acceptability in the County.
6. List major instances in which current administrative devices and the revised interim general plan do not prescribe development policy in sufficient detail, and describe the content and priority of specific plans needed to fill these gaps.

Final Product: The final product will be a statement and description of needs and priorities for improving the legal and administrative tools to carry out the revised interim general plan, together with a list of needs and priorities for detailed specific plans both for physical elements and geographic areas. Problems needing particular attention during the refined plan stage will be identified.

## 6. Land Use

### 6-10: DEVELOPMENT OF THE LAND USE ALLOCATION MODEL

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Purpose: The purpose of this component is to develop a land use allocation model for use in preparing data inputs to the land use and transportation elements of the revised interim general plan and of the refined general plan and to provide an analytical tool for use by the County Planning Department in the continuous planning process.

The model will be designed to incorporate the population and economic forecasts developed under Section 5 and to translate these forecasts into land use requirements. It will permit the systematic analysis and evaluation of alternative patterns of population and economic growth and facilitate testing the impact of alternative public policies on the pattern of land uses throughout the County.

Method: The first step in the method of approach is to determine the specific uses and needs of the Planning Department for a land use allocation model. This step, in conjunction with a literature search and an evaluation of the state of the art, will permit the selection of the type of model most suited to the needs of the County. The selection of the most appropriate type of model will be made jointly by the consultants and the Planning Department. The selection will be based on an evaluation of existing Bay Area models, such as those developed by the Bay Area Transportation Study and the Bay Area Simulation Study. These models might be adapted to the specific needs of the County or a different model, such as that being prepared for Santa Clara County, could be selected. In either case, the model finally chosen must meet the criteria of satisfying the long range planning needs of the County Planning Department and be capable of implementation by departmental staff.

The basic land use allocation model usually proceeds by first translating estimates of basic employment, through the use of land absorption coefficients, into land requirements by tract. Next, the residential land requirements of the population related to basic employment is determined. The third step is to allocate population-serving employment and its related population and determine their land requirements. The need for other types of land use, such as parks and school sites, is usually assigned independently, and the requirements for these kinds of

land uses will be ascertained through detailing studies which will be performed both within the initial five-year study period and in later years. The amount of employment allocated to each tract is related to accessibility, land availability and holding capacities and public policy constraints such as zoning and subdivision regulations.

Once the selection of the model is made, it will be necessary to make specific adaptations to meet the needs of this study. Further, data requirements for operating the model will be identified and related to the planning information systems study described in Section 2. Preparations will be made to obtain the necessary data as soon as it is available from the 1970 census. The second major source of data will be the land use inventory described in Work Component 6-12.

As soon as census and land use data become available, initial tests of the model will be made. On the basis of these tests, necessary adjustments will be identified and corrections made. After this process is completed, the model will be run to produce final projections of land uses by census tract. The final step will be to conduct training sessions for assigned county staff to develop proficiency in the operation of the model.

#### Work Items:

1. Review of literature and state of the art.
2. Evaluation of existing Bay Area and other land use allocation models.
3. Make selection of appropriate model.
4. Make necessary adaptations in the selected model.
5. Specify data requirements for implementing the model and make arrangements to obtain necessary data from the census.
6. Test the model using 1970 population, economic, and land use data.
7. Prepare final land use projections by census tract.
8. Conduct training session to insure staff ability to carry out modeling procedures.



Final Product: The final product will be an operational land use allocation model for use by the County in its continuing planning program and a set of land use projections which will serve as inputs to the land use plan and the traffic model in developing the refined general plan.

## 6. Land Use

### 6-11: LAND USE INVENTORY DESIGN

Purpose: In order to obtain detailed land use and condition of structures data related in time to the 1970 census, a program will be developed and a manual will be prepared to specify the data to be collected and provide detailed procedures, forms, and other materials that will aid in the collection, organization, classification, editing, correction, filing and retrieval of data in accordance with the planning information system developed in Section 2.

Method: Existing procedures in use in the area or in other comparable studies will be reviewed, refined, and adapted to meet the needs of Contra Costa County and will be coordinated, where necessary and desirable, with standards and procedures being used in other programs of regional or state agencies. The land use coding system will be an adaptation of the URA/BPR Standard Land Use Code. This program will be subject to review and approval by various agencies and organizations within the area, and standards will be established to be followed in all subsequent major inventory programs and activities.

#### Work Items:

1. Identify data to be collected and formulate objectives and principles.
2. Assemble and analyze present data collection techniques and resources and recommend methods for achieving County-cities coordination and division of work.
3. Review techniques, procedures, and systems being proposed as standards or being utilized in other comparable work including BATSC, ABAG, and San Diego County programs.
4. Develop file format and mechanical coding system in conformity with procedures established in Section 2.
5. Redefine County planning units.
6. Draft manual or manual outlines.

7. Review, test, revise, and refine.
8. Complete manual including necessary related materials.

Final Product: The final product will be a program design and manual of procedure for the collection, organization, verification, and storage of basic land use and condition of structures data for use by city and County staffs in this and subsequent programs.

6. Land Use

6-12: LAND USE INVENTORY

Purpose: The purpose of the land use survey is to assemble current land use, dwelling unit, space use, and condition of structure information for the County, based on the system developed in Work Component 6-11.

This inventory will be the first complete parcel-by-parcel land use inventory made in Contra Costa County and will be one of the primary inputs to the comprehensive planning data bank system. In contrast to the generalized block data available for development of the revised interim general plan, this inventory will provide accurate and detailed land use data by parcel. It is an essential requirement for the refined general plan and will constitute the beginning of a continuing inventory system to maintain current information for the continuing planning program and for many of the day-to-day planning activities and decisions by various public agencies and private interests.

Method: From existing sources as feasible, and through original field research as needed, information on 1970 land use will be assembled and tabulated for all parcels, numbering approximately 160,000, and for all blocks in the County. Use of the coding manual developed for this purpose will provide a uniform system of classification for the functional activities carried out on the land. Data processing equipment utilizing the information system developed in Section 2 will be used to effect speed and accuracy in the gathering, recording, and utilization of land use information. Phasing of the data assembly will occur as dictated by resources with first emphasis given to parcel land use and second emphasis given to subparcel use and space use.

Work Items:

1. Assemble map sources and develop County, planning area and Assessor's map work sheets.
2. Prepare field maps, field forms, and control forms.
3. Conduct field inventories to develop a parcel record system.

4. Code and quantify field inventory data and enter into basic records, utilizing appropriate edit and correction procedure.

Final Product: A 1970 verified parcel land inventory record in data bank record format, in detailed small area parcel maps, and in a countywide generalized existing land use map.



6. Land Use.

6-13: REFINED GENERAL PLAN  
OPEN SPACE ELEMENT

Purpose: The superior data base and greater level of data detail used to prepare the refined general plan make it necessary to refine and add detail to the open space element of the interim revised general plan using the output of subsequent natural resources, effectuation, and land use studies.

Method: Using the output of natural resources, effectuation, and land use studies prepared subsequent to the open space element of the interim revised general plan, all open space proposals will be re-evaluated and delineated in greater detail.

Work Items:

1. Review development trends since preparation of the interim revised general plan.
2. Review results of subsequent land use, natural resources, and effectuation studies.
3. Prepare open space standards and criteria and compare with open space proposals of the interim revised general plan.
4. Prepare open space proposals at the scale of re-defined County planning units.
5. Correlate with other elements of the refined general plan.

Final Product: The final product will consist of refined open space proposals and supporting documentation and maps correlated with other elements of the refined general plan.

6. Land Use

6-14: REFINED GENERAL PLAN  
LAND USE ELEMENT

Purpose: The purpose of this component is to revise and add detail to the land use element of the interim revised general plan, using the more detailed and generally superior 1970 land use inventory, the 1970 census data and the land use allocation model developed in Component 6-10.

Method: Conflicts between land use model projections and current goals, policies and revised interim general plan proposals will be analyzed to expose key issues, which will then be studied in detail. All plan elements will be developed in more detail than in the interim revised general plan.

Work Items:

1. Review development trends since preparation of interim revised general plan.
2. Incorporate the results of the 1970 land use inventory and the 1970 census.
3. Reconcile the land use model projections with the plan proposals and justify differences.
4. Conduct studies of space demands for agriculture, manufacturing, retail and wholesale trade, commercial services, and residential use, to establish and verify their relationships to the revised economic and population projections.
5. Correlate the land use element with the transportation and public facilities elements of the refined general plan.

Final Product: The final product will consist of a refined land use plan and maps and supporting documentation, correlated with other elements of the refined general plan.

6. Land Use

6-15: REFINED GENERAL PLAN  
EFFECTUATION STUDY

Purpose: So that the refined general plan may represent County development policy, it must be accompanied by an effectuation program to which the County is committed. This step will define these needs as a basis for drafting regulations and preparing specific plans.

Method: Available effectuation devices will be measured against the needs of the refined general plan and specific recommendations will be made for changes and new legislation. Capital improvement program needs will be covered under Work Component 5-8.

Work Items:

1. Review County and city subdivision and zoning regulations and recommend uniform terminology where feasible.
2. Specify needed changes in County development controls. (Note: This does not include the drafting of ordinances.)
3. Suggest changes in city development regulations where appropriate.
4. Recommend new legislation if needed to carry out the refined general plan.
5. Establish priorities for preparation of specific plans and define appropriate content of each type of specific plan needed.
6. Review historic preservation needs and powers and prepare outline of needed regulations.

Final Product: The final product will be a report containing a comprehensive, detailed program for effectuation of the refined general plan, including all needed measures except capital improvement programs (which are covered in Component 5-8), and a program for the preparation of ordinances or specific plans.

6. Land Use

6-16: TRANSIT IMPACT STUDY OF THE  
LAFAYETTE STATION AREA

Purpose: Two of the major lines of the Bay Area Rapid Transit System, now under construction, will serve Contra Costa County. The purpose of this component of the study is to evaluate the potential effect of rapid transit facilities on County development by undertaking a pilot study to determine the economic impact on the vicinity of one transit station. This will provide insights into the economic impact in the immediate vicinity of other such stations.

Method: The study will be limited to an analysis of the impact at the Lafayette station. It will be carried out in three phases:

Phase I. This phase will include an historical analysis and description of the economic activities in the vicinity of the station prior to the announcement of the location of the rapid transit station. The purpose of this step is to achieve an understanding of the impact of the station on land use and values, ownership patterns, frequency of land sales, and related factors from the earliest point in time and continued through the actual construction period.

Phase II. This phase will include an analysis of the development activity within the zone of impact from the time of the announcement of the station until the present time. This activity will be compared with the activities in a study control area. The control area will be an area similar in characteristics to those of the transit station and will be used to attempt to isolate the effects of the transit station from those that could be considered as normal economic development activity.

Phase III. This phase will include the projection of population, economic and land use patterns in the zone of impact. Available forecasts of future economic activity and land use patterns will be reviewed and evaluated in terms of their implications for increased activity in the vicinity of the Lafayette station. Based on the results of the analysis described in the preceding sections, projections of alternative levels of economic activity will be made. These projections will be translated into land use and space requirements within the area of impact.

### Work Items:

1. Historical analysis will include but not be limited to:
  - a. Changes in land uses
    - Industrial
    - Commercial, intensity and type
    - Residential
    - Public
  - b. Changes in land values
  - c. Changes in population density and composition, income, car ownership
  - d. Changes in zoning
  - e. Frequency of land sales
  - f. Changes in land ownership patterns
  - g. Changes in employment
  - h. Change in traffic patterns and compositions
  - i. Change in public and governmental services
2. Comparative analysis. The same variables indicated above will be collected for a control area and compared with the changing situation around the transit station.
3. Review of land use and economic projections
  - a. Inventory existing studies
  - b. Evaluate studies
  - c. Make projections of floor space by type of establishment, number of dwelling units by type, and number of parking spaces needed.



Final Product: The final product will be a document including the results of the analysis described above, high and low projections of the impact of the transit station and a discussion of the implications of these projections for land use policies in the vicinity of the station.

6. Land Use

6-17: DEVELOPMENT OF LAFAYETTE  
BART STATION AREA PLAN

Purpose: In order to realize maximum benefit from the development potential created by BART stations and to avoid congestion that would impair their function and negatively affect the community, a development plan is needed for the area surrounding each station. The Lafayette BART Station Area Plan, to be prepared under this work item, will serve this function in Lafayette and will develop and illustrate principles applicable at other stations.

Method: Using projections of floor space in retail stores, offices, restaurants, amusements, service establishments, and industrial plants, number of dwelling units by type, and number of parking spaces needed to serve these uses, alternative development plans will be prepared.

Work Items:

1. Delimit the planning area in collaboration with the City and the County.
2. Prepare a base map, make a current land use and space occupancy survey, and map findings.
3. Prepare alternative sketch plans.
4. Review alternative plans with economists, traffic engineers, City of Lafayette representatives, and County staff.
5. Prepare proposed plan and effectuation recommendations.

Final Product: The final product will be a three-dimensional development plan which will show land use patterns, building masses, residential densities, traffic circulation patterns, feeder transit routes, and parking facilities; and a report containing recommendations for carrying out the plan.









7. Community Facilities

7-1: INVENTORY AND SURVEY OF MAJOR  
COMMUNITY FACILITIES

Purpose: The purpose of this component is to determine the location, impact, and probable future development of community facilities that are major traffic generators and space users, and which may be included in the capital improvement program.

Method: Data on all existing major facilities and on development plans of operating agencies will be obtained and classified.

Work Items:

1. Collect data on the function, location, traffic generation, space requirements, service areas, and expansion or phase-out plans for community facilities of the scale of a high school, college, major hospital, major military installation, or major government center.
2. Record the data source and develop procedures for maintaining data current.

Final Product: The final product will be a file of data on existing community facilities and expansion or phase-out plans of public and private agencies operating major community facilities.

## 7. Community Facilities

### 7-2: EVALUATION OF NEEDS AND PLANS FOR COMMUNITY FACILITIES

Purpose: The purpose of this component is to determine the needs for major community facilities based on an evaluation of existing and proposed community facilities and on proposals of the land use and transportation elements of the interim revised general plan.

Method: Standards will be devised and community facilities needs will be projected.

#### Work Items:

1. Study community facilities needs based on population distribution and composition, social goals, and anticipated general levels of investment.
2. Devise standards and project deficiencies, based on an evaluation of existing facilities and plans surveyed in Work Component 7-1.
3. Determine and describe major community facilities needs by geographic area where appropriate.
4. Describe countywide or regional needs for unique locators, i.e., those facilities for which site location cannot be predicted because service area is flexible or very large.

Final Product: The final product will be a list of location and site requirements of needed major community facilities, geared to the land use proposals of the land use and transportation element of the interim revised general plan.

## 7. Community Facilities

### 7-3: SKETCH PLAN OF MAJOR COMMUNITY FACILITIES

Purpose: The purpose of this component is to indicate an optimum arrangement of major community facilities in sufficient detail to be consistent with the land use and transportation elements of the interim revised general plan.

Method: Community facilities will be distributed in accord with the standards developed in Components 7-1 and 7-2, to sites that meet location criteria previously developed.

#### Work Items:

1. Locate facilities having specific service areas and site requirements.
2. Indicate possible sites for unique locators expected to select sites in the County.
3. Review proposals with responsible agencies.

Final Product: The final product will be a community facilities sketch plan that will complement the selected land use and transportation elements of the interim revised general plan.

7. Community Facilities

7-4: REFINED GENERAL PLAN:  
COMMUNITY FACILITIES ELEMENT

Purpose: The purpose of this component is to revise and add detail to the community facilities sketch plan in accordance with the needs of the refined land use and transportation elements of the refined general plan and to serve as a principal base for the capital improvement program developed under Component 5-8.

Method: Using the proposals of the refined land use plan, the need for major community facilities will be determined and distributed to sites in accord with criteria previously developed and reviewed as part of this Section.

Work Items:

1. Map all existing and programmed community facilities, including neighborhood facilities, at the scale of the re-defined County planning unit maps.
2. Review plans and review or devise standards for the following facilities having service areas larger than a neighborhood:

Recreation facilities, including parks,  
marinas, major hiking, bicycle, and  
riding trails

Public protection facilities

Major educational facilities

Health and welfare facilities

Public administration facilities

3. Review standards and define service areas, incorporating the results of the 1970 land use inventory and 1970 census and the land use plan developed for the refined general plan.

4. Distribute listed community facilities to serve the needs of the land use pattern proposed by the refined general plan.
5. Review proposals with responsible agencies.

Final Product: The final product will be a set of refined community facilities plan maps constituting the community facilities to be shown on the refined general plan, and a descriptive report containing supporting documentation, correlated with other elements of the refined general plan.









## 8. Public Utilities

### 8-1: WATER

Purpose: The purpose of this component is to develop a Countywide plan to be used as a guide for the future expansion of existing waterworks facilities and the construction of new waterworks facilities, and which will be incorporated in the public utilities element of the refined general plan.

Method: Available data from water service agencies will be collected and reviewed, and an inventory of existing waterworks facilities will be compiled. Plan preparation will be based primarily upon an analysis and evaluation of the data and information collected regarding existing facilities and upon future population and land use projections developed during the study under Work Components 5-5 and 6-14.

Two alternate plans will be prepared, each based upon a major alternative assumption described briefly below:

- ... Assumption 1: Western Contra Costa County and certain portions of Central Contra Costa County will be served by the East Bay Municipal Utility District, with the Mokelumne Aqueduct and other Sacramento River Basin sources as the primary supply sources. Eastern Contra Costa County and remaining portions of Central Contra Costa County will be served directly from overland facilities such as the Contra Costa Canal, with intakes located within the Western Sacramento-San Joaquin Delta.
- ... Assumption 2: The Mokelumne Aqueduct, the Sacramento-San Joaquin Delta and other Sacramento River Basin sources will be the primary sources for the water supply of the entire County. The jurisdictional boundaries of existing water service agencies will be ignored.

For both alternative plans, assumptions will be made in cooperation with the Contra Costa County Water Agency regarding the extent of water service to be provided from "offshore supplies" now existing in the Western Sacramento-San Joaquin Delta.

Work Items:

1. Collect and review existing data regarding water supply, service, and distribution. Approximately thirty water service agencies operate within the County, and all pertinent data and previous studies available from these water service agencies and from other agencies whose activities relate to water supply will be collected and reviewed.
2. During the collection of data phase, review with representatives of the various water service agencies subjects including existing service conditions, current problems and deficiencies, and presently projected plans of the respective agencies.
3. Analyze and evaluate the collected data and information utilizing previous studies to the greatest extent practicable.
4. Develop criteria for estimating capacity and other requirements for future water supply facilities.
5. Formulate a complete schedule of projected requirements, including size, alignment, and location of future water supply facilities, utilizing output data from the population and land use components of the study.
6. Make comparative cost analyses to aid in the evaluation of alternative plans.

Final Product: The final product will be a Countywide plan for water supply and distribution with maps describing recommended water service facilities for each of the two major alternative assumptions, and a report text describing the existing conditions and projected requirements, outlining the basis for all proposed facilities, and recommending a future course of action to provide adequate water supply and service in the County. The selected plan will be included in the public utilities element of the refined general plan, and general cost estimates will be included in order to provide a basis for the evaluation of alternative solutions.



## 8. Public Utilities

### 8-2: SEWAGE

Purpose: The purpose of this component is to develop a County-wide plan to be used as a guide for the future expansion of existing sewerage facilities and the construction of new sewerage facilities, and which will be incorporated in the public utilities element of the refined general plan.

Method: The County will be divided into three general planning areas for the purpose of studying existing and future sewage and waste disposal requirements. These general sewerage service planning areas will be designated Eastern Contra Costa County, Central Contra Costa County, and Western Contra Costa County.

The basic approach will be similar to that described for Work Component 8-1, the waterworks facilities and water supply study, analysis, and evaluation. Available data from sewerage service agencies will be compiled. Plan preparation will be based primarily upon an analysis and evaluation of the data and information collected regarding existing facilities and upon future population and land use projections developed during the study under Work Components 5-5 and 6-14.

#### Work Items:

1. Collect and review existing data regarding sanitary sewage, sanitary sewer systems, and industrial waste. Approximately twenty-five municipalities, sanitary, and county sanitation districts are involved with sewage collection and disposal and operate within the County. All pertinent data and previous studies available from these sewerage service agencies and from other agencies whose activities relate to sewage collection and disposal will be collected and reviewed.
2. Review with representatives of the various sewerage service agencies subjects including existing service conditions, current problems and deficiencies, and presently projected plans of the respective agencies.

3. Analyze and evaluate the collected data and information, utilizing previous studies to the greatest extent practicable.
4. Develop criteria for estimating capacity and other requirements for future sewerage service facilities.
5. Formulate a complete schedule of projected requirements, including size, general alignment and location of future sewage collection and disposal facilities, utilizing output data from the population and land use components of the study.
6. Make general and comparative cost estimates of basic system components.

Final Product: The final product will be a Countywide plan for sewerage service facilities with maps describing recommended sewage collection and disposal facilities for each of the three designated general sewerage service planning areas. Problem areas requiring immediate attention will be delineated or described. A report text will be included, describing the existing conditions and projected requirements, outlining the basis for all proposed facilities, and recommending a future course of action to provide adequate sewage collection and disposal services within the County. The plan will be included in the public utilities element of the refined general plan, and general cost estimates will be included in order to provide a basis for the evaluation of alternative solutions.

8. Public Utilities

8-3: SOLID WASTE

Purpose: The purpose of this component is to develop a County-wide plan to be used as a guide for the accommodation or disposal of all solid wastes originating within Contra Costa County, and which will be incorporated in the public utilities element of the refined general plan.

Method: Basic consideration shall be devoted to the accommodation of solid waste originating within the County by means of land fill disposal. Research and investigation will be conducted concerning other methods of solid waste disposal, and recommendations regarding other solid waste disposal techniques shall be incorporated as an important, integral part of this study.

Available data from solid waste collection and disposal agencies will be collected and reviewed, and an inventory of existing solid waste disposal facilities will be compiled. Plan preparation will be based primarily upon an analysis and evaluation of the data and information collected regarding existing solid waste disposal services and facilities, upon research and investigation of various methods of solid waste disposal, and upon future population and land use projections developed during the study under Work Components 5-5 and 6-14.

Work Items:

1. Collect and review existing data regarding solid waste disposal. Pertinent data and previous studies available from solid waste collection and disposal firms and agencies within the County and from other agencies whose activities relate to solid waste will be collected and reviewed.
2. Review with representatives of the various solid waste collection and disposal firms and agencies subjects including existing service conditions, current problems and deficiencies, and presently projected plans of the respective private firms and agencies.
3. Analyze and evaluate the collected data and information utilizing previous studies to the greatest extent practicable.

4. Research and investigate various methods of solid waste disposal, including newer techniques developed, employed, or considered by other agencies. Evaluation of the feasibility of joint out-of-county disposal will be included in addition to in-county land fill disposal and incineration combined with waste or discharge heat recovery.
5. Investigate and evaluate alternate methods of collection and disposal from the standpoint of conservation, reclamation, air and water pollution, and aesthetics. Develop criteria for evaluating alternate methods and specific disposal sites.
6. Develop criteria for estimating capacity and other requirements for future solid waste disposal facilities.
7. Make general and comparative cost estimates of alternatives.
8. Formulate a schedule of projected requirements, including proposed location and capacity of required disposal sites to be utilized for land-fill operations if this method of disposal is selected, employing output data from the population and land use components of the study.

Final Product: The final product will be a Countywide plan for solid waste disposal with maps locating recommended solid waste disposal sites and indicating the service area for each site if this method of disposal is selected. Maps shall also include the location of solid waste disposal facilities based upon research, investigation and evaluation of other or newer disposal methods. A report text will be included, describing existing conditions and requirements, outlining the basis for all proposed facilities, and recommending a future course of action. The plan will be included in the public utilities element of the refined general plan, and general cost estimates will be included in order to provide a basis for the evaluation of alternative solutions.







9. Transportation Objectives and Criteria

9-1: FORMULATION OF TRANSPORTATION  
SYSTEM OBJECTIVES

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Purpose: The purpose of this component is to make an explicit formulation of transportation system objectives which are necessary as a basis for the establishment of the more detailed transportation system criteria and hence the development of alternative system plans.

The building of two rapid transit lines through the County has fixed, to some degree, the broad characteristics of the County transportation system. However, transportation system objectives will be needed to guide plan formulation in the areas of intra-County transit service, extension of rapid transit lines to other parts of the County, and provision of feeder transit service to rapid transit stations.

Method: The transportation system objectives for Contra Costa County will be developed in such a way as to influence and be influenced by the general development objectives of the area to be developed under Work Element 1-6. Consideration will be given to such important factors as:

1. Service requirements of different areas in the County.
2. Functional specialization of various modes of transport.
3. Transportation needs of groups which may be largely dependent upon public transportation for adequate access to employment opportunities and to community services and facilities.
4. Future expectations as to changes in residence and industry locations as well as changes in working and living habits of people.
5. The attractive force of transit and the shifting of the modal split.

Work Items:

1. Review, in general terms, the impact of the existing transportation system on the extent, type, and direction

of development (or under-development) in the County.

2. Review development conditions in similar areas that resulted from the attainment of certain transportation system objectives.
3. Review general trends and expectations in future types and locational patterns of residence and working places as well as in future living and working habits of people.
4. Participate in the formulation of development goals of the County insofar as transportation matters are concerned.
5. Formulate transportation system objectives for Contra Costa County.
6. Present system objectives to various interested committees and agencies for discussion, review, and modification as required to secure general approval of a set of objectives.

Final Product: The final product will be a technical memorandum summarizing major findings of above work items and presenting an approved set of transportation system objectives.

9. Transportation Objectives and Criteria

9-2: ESTABLISHMENT OF  
TRANSPORTATION SYSTEM CRITERIA

Purpose: The purpose of this component is to establish transportation system criteria which will form the basis for the generation of the alternative total transportation system schemes.

Method: In the light of the general development and transportation system objectives formulated Under Work Components 1-6 and 9-1, transportation system criteria will be established in cooperation with the Bay Area Rapid Transit District, Bay Area Transportation Study Commission, Contra Costa County Commuter Association, and other interested agencies and committees.

Work Items:

1. Establish transportation system criteria in cooperation with interested agencies, committees, and special districts that will cover such elements as:
  - a. Balance between various transportation modes
  - b. Network configuration and areas to be served by the basic system
  - c. Travel time characteristics
  - d. Frequency of transit service
  - e. Inter-modal coordination
  - f. Safety levels

Final Product: The final product will be a technical memorandum report explaining the above effort and presenting a mutually agreed upon set of transportation system criteria.









## 10. Basic Transportation Data

### 10-1: DEVELOPMENT OF HIGHWAY INVENTORY MANUAL

Purpose: The purpose of this component is to develop a highway inventory manual which will specify the street and highway data to be collected during the inventory phase of this study and provide the detailed procedures that will guide their collection. This manual will also set forth the standards to be followed in all subsequent updating of street and highway inventories.

Method: Optimum use will be made of available data in accordance with the requirements of the planning process so that the need for new field surveys will be minimized. The manual will describe procedures for obtaining existing data and supplementing it as required. This program will be subject to review by concerned agencies, and standards will be established to be followed in subsequent inventory programs.

#### Work Items:

1. Identify the type and extent of street and highway facilities data to be collected.
2. Identify the sources, forms of availability and procedures for release of existing data.
3. Assemble and analyze present data collection techniques and resources.
4. Draft the manual and review.
5. Submit the manual for review and comments as required.
6. Complete the manual.

Final Product: The final product will be a manual for the collection and assembly of street and highway facilities data, setting forth the specific items of street and highway data needed for analysis purposes, and the method of collection.

10. Basic Transportation Data

10-2: DEVELOPMENT OF  
TRANSIT INVENTORY MANUAL

Purpose: The purpose of this component is to develop a transit inventory manual which will guide the collection of available transit data that is useful during the first phase of this study, and that will also establish the guidelines for transit data collection for subsequent phases and on a continuing basis thereafter.

Method: The manual will describe procedures for obtaining existing pertinent data and supplementing it as required. Standards will be established to be followed in subsequent inventory programs. Cooperation of existing transit agencies as BARTD, Western Greyhound Lines, the County Transit Lines, and AC Transit System will be sought in this manual preparation.

Work Items:

1. Identify type and extent of transit data to be collected.
2. Review techniques, procedures and systems being proposed as standards or being utilized in other comparable work.
3. Draft the manual.
4. Submit the manual for review and comments as required.
5. Complete and print the manual.

Final Product: The final product will be a manual for the collection and assembly of transit facilities data.

## 10. Basic Transportation Data

### 10-3: INVENTORY OF STREET AND HIGHWAY FACILITIES

Purpose: The purpose of this component is to obtain an inventory of existing street and highway facilities in order to make a quantitative evaluation of current operational characteristics and a review and analysis of committed and proposed facilities.

Method: Work under this component will consist of data extraction from existing files supplemented by a field inventory as needed to complete the required data set. The data items collected will be established under Work Component 10-1 and typically will include street and highway right-of-way and traveled-way widths, location and type (parallel or angle) of street parking, traffic control regulations affecting traffic capacity (parking and turning prohibitions, one-way rules, off-center lane movements, etc. ), location of traffic control signals, motor vehicle daily and peak hour traffic volumes, speed limits, operating speeds or travel times for peak-hour and off-peak conditions, traffic speed and delay data, accident rates, and other similar factors.

The determination of service sufficiency as indicated by the volume/capacity relationship will be included as a part of the highway inventory procedure.

It is expected that a major portion of the inventory data will be available from the files maintained by the County, BATSC, California Division of Highways and the cities.

#### Work Items:

1. Establish liaison with all organizations involved in street and highway planning and operation in the County.
2. Obtain all available planning data and information regarding existing, committed, and proposed street and highway facilities in accordance with the guidelines established under Work Component 10-1.
3. Review and analyze collected data to identify areas that require special and detailed treatment during the development of the revised interim general plan.

4. Identify areas where supplemental data is needed to satisfy the requirements of the planning process.
5. Obtain supplemental data by limited surveys, if necessary.
6. Determine the level of service operation desired for each class of roads.
7. Determine the capacity of major arterials at the desired service level.
8. Calculate the volume/capacity ratio for major arterials and determine the service sufficiency for each.
9. Prepare necessary tabulations and graphical illustrations that depict characteristics of the existing road system.
10. Prepare a technical memorandum describing results of above effort.

Final Product: The final product will be a technical memorandum describing existing street and highway facilities, their current operational characteristics, the status of street and highway planning and construction in the County, and a compilation of data for use in the traffic allocation model (Component 11-2).

10. Basic Transportation Data

10-4: INVENTORY OF TRANSIT FACILITIES

Purpose: This work element will supplement Work Component 10-3. Together they are intended to present a complete picture of existing ground transportation service in the County and to provide the basic raw data upon which the interim and final transportation plans will be developed.

Method: The original work program provided for an inventory of all existing public transportation services in the County. An inventory has already been made for the transit services provided by the Alameda-Contra Costa Transit District in the County and is contained in the final report of the Northern California Demonstration Project. Therefore, this transit inventory will include updating the prior inventory and will inventory the County Transit lines, Western Greyhound lines, and data currently available for BARTD's two rapid transit lines under construction in the County.

Work Items:

1. Establish liaison with public transportation organizations in the County.
2. Obtain transit data in accordance with procedures described in the Transit Inventory Manual developed under Work Component 10-2. This data will include:
  - a. Current and proposed routes
  - b. Type, size, condition, and quantity of equipment, existing and proposed
  - c. Schedules and stop frequencies
  - d. Current and estimated patronage
  - e. Fares
  - f. Station facilities including auto-transit interchange facilities

3. Identify areas where additional data is required for the development of the interim revised general plan.
4. Conduct limited surveys, if necessary, to obtain the additional data.
5. Prepare tabulations and illustrations for inclusion in the technical memorandum.

Final Product: The final product will be a technical memorandum describing existing and committed transit facilities, and a compilation of data for use in the traffic distribution model (Component 11-2).



## 10. Basic Transportation Data

### 10-5: DEVELOPMENT OF TRAFFIC ANALYSIS ZONES

Purpose: To develop a geographic zoning system to which the land use, demographic, economic, and trip origin-destination data can be related.

Method: The zone delineations will be established in a "building block" form so that they will be generally compatible, or can be correlated, with those established by the California Division of Highways. They will also be capable of being combined to correspond with the larger zones employed in the Bay Area Transportation Study. This procedure will facilitate relating the current study to prior work and the application of the traffic planning data from these other studies to the current study. Traffic analysis zones will also be compatible with census tracts or enumeration districts, or combinations of enumeration districts, to facilitate utilization of census information. Zone delineations will be developed to establish comparability with census boundaries to provide for the easy assembly of data which can be aggregated and correlated to correspond to the traffic analysis zones.

The development of the zonal system will be related to the transportation network or networks to which traffic assignments are to be made. The street system studied will include the primary highways, Federal Aid Secondary Arterials, Federal Aid Secondary Collectors, and other major arterials and collectors. A suggested future street and highway system will be initiated by the County and the zone system will be correlated with it. The two rapid transit lines now being built by BARTD in the County, together with possible future rapid transit extensions, will also be considered in the development of the traffic zonal system. The street, highway, and zone systems will be mutually agreed upon prior to the initiation of work on statistical analysis but may require minor alteration as the work progresses to facilitate application of data from the BATSC files.

#### Work Items:

1. Obtain zone delineations developed by the California Division of Highways and the Bay Area Transportation Study.

2. Develop factors to be considered in the establishment of analysis zones for this study and criteria for their inclusions. These factors will include, but not be limited to the following:
  - a. Present zonal breakdown
  - b. Land use and activity concentration
  - c. Census tract boundaries
  - d. Natural and man-made barriers
  - e. Location of rapid transit lines and stations
  - f. Location of other transportation terminals
  - g. Street and highway system
3. Establish analysis zones in accordance with above considerations.
4. Coordinate with California Division of Highways, BATSC and BARTD.
5. Review with Technical and Policy Committees and modify, if necessary.

Final Product: The final product will be a map of the County at a suitable scale illustrating the traffic analysis zones to be used during the course of this study.

10. Basic Transportation Data

10-6: DEVELOPMENT OF STREET, HIGHWAY, AND  
TRANSIT BASE YEAR NETWORK

Purpose: The purpose of this component is to develop the base year street, highway, and transit computer-oriented link-node network to be used in the determination of traffic parameters needed for the trip generation and assignment model.

Method: Information describing the base year street, highway, and transit facilities gathered under Work Components 10-3 and 10-4 will be used to define the parameters of existing systems. This information would typically include for streets and highways data that is described in Component 10-3. For the transit system, this information would include distances, average operating speed and traffic volumes. A base map will be prepared to represent the base year transportation system with a series of nodes and links. This symbolic network will be coded in numerical machine language and will be used as a computer input in later work components of the study.

Work Items:

1. Summarize street, highway, and transit data and information collected under Work Components 10-3 and 10-4.
2. Prepare a base map describing the existing transportation network and indicating the location of major intersections, traffic control devices, interchanges, rapid transit and bus stations and terminals, etc.
3. Devise a coding system that has the capability of being adapted to future transportation networks.
4. Examine transportation and transit networks developed by BATSC, BARTD, and the California Division of Highways.
5. Develop a link-node network for the existing transportation system.

6. Coordinate with BATSC, BARTD, and the California Division of Highways networks, and modify if necessary.
7. Present to concerned agencies for review and comment.

Final Product: The final product will be a link-node network map with appropriate symbols and identifications that relate the existing ground transportation system to the County traffic analysis zones.







## 11. Interim Transportation Plan

### 11-1: ORIGIN-DESTINATION ANALYSIS

Purpose: The purpose of this component is to determine the base-year travel patterns for the County relative to the study zones adopted in Work Component 10-5, utilizing the BATSC data to establish the estimating parameters and control for movement between the BATSC zones.

Method: Contra Costa County data will be extracted from the BATSC files. The BATSC data comprising the base-year origin-destination matrix of person trips, classified by mode of travel, will be obtained at the BATSC-USM traffic zone level of detail and the data will have been contingency checked so that invalid or missing codes will not be encountered in critical fields during subsequent processing. The BATSC data will be factored to be representative of the travel volumes existing at the time of survey.

The BATSC data obtained should include all trips made to or from Contra Costa County, trips made by Contra Costa County residents with both termini outside the County, and all trips made by non-residents of the County traveling through the County. Land use, economic and population data assembled in other phases of this study will also be required for the BATSC-USM zonal system so that initial model development work can be directly correlated with the BATSC origin destination data files. The Consultant will become intimately familiar with the BATSC data files and will be responsible for making the specific requests involved in data acquisition.

#### Work Items:

1. Review and study BATSC data files and identify those pertinent to the development of origin-destination tabulations.
2. Specify data requirements and process all requests for data acquisition from BATSC through the County.
3. Prepare necessary materials specifying required origin-destination trip summaries.
4. Process BATSC magnetic tapes, after determining that

they are error-proof, using available BPR programs to get required origin-destination tabulations.

5. Prepare special tabulations of travel characteristics to major trip generators (central business districts, Buchanan Airfield, large shopping centers, major institutions, etc.).
6. Prepare necessary characteristics for trips made by County residents with both termini outside the County and those made by non-residents of the County traveling through the County.
7. Summarize trip characteristics obtained in Steps 4, 5 and 6 immediately above and analyze result.
8. Prepare a technical memorandum summarizing above analyses and findings.

Final Product: The final product will be a technical memorandum describing existing travel characteristics, and a block of data for use in model projections.

## 11. Interim Transportation Plan

### 11-2: DEVELOPMENT OF TRAFFIC MODELS

Purpose: The purpose of this component is to develop and calibrate mathematical models for future trip generation and distribution among various elements of the interim transportation network, using BATSC base-year data.

Method: Traffic model development will be divided into three general parts--trip generation, modal split, and trip distribution. The development and calibration of the model will be related as nearly as possible to the BATSC methods with refinements injected for the County above and beyond those required for the BATSC project.

As one possible approach to the trip generation problem, multiple regression analyses will be performed to establish the parameters for estimation of daily person trip generation as related to the character and intensity of land use in each traffic zone. The estimating equations will be derived by use of standard electronic computer programs, and the formulae will be verified by comparing theoretical trip ends to the actual trip ends as determined by the BATSC base-year origin-destination data. The possible use of trip-rate estimation procedures will also be investigated with the final selection of methodology dependent upon the relative accuracy of the predictive results for the base year.

A trip distribution model will be calibrated, using BATSC origin-destination planning data, and the base-year internal trip production will be distributed to purpose ends. Internal-external trips will be distributed on the basis of a similar model developed from the BATSC data, and through-county trips will be assigned as determined by the expanded BATSC survey.

Estimates have already been prepared by BARTD consultants for future patronage of the BARTD system. However, there remains to be explored the bus movements to and from the rapid transit stations and elsewhere in the County. A very important aspect of this study is the forecast of the number of people who will use public transit rather than private passenger cars for their trips, i.e., the modal split. This determination may be accomplished by either removing the estimated transit passenger trips from the total person trips for each zone

before the distribution process or they may be split off as part of the latter process. Planning parameters for the future concerning varying levels of transit and highway service can be employed to test alternate conditions; however, each condition tested will vary the accessibility and, hence, influence the modal split.

Work Items:

1. Study existing and 1980 projected land use, economic, and demographic data for each of the County's traffic analysis zones.
2. Obtain and validate future BARTD patronage estimates, preferably at the 1980 level, broken down by station-to-station movements and expected volumes at each station.
3. Review BATSC traffic models together with other modeling techniques developed by other organizations.
4. Develop objectives of each of the required models and criteria for their attainment taking into consideration the particular characteristics of the County.
5. Establish the most significant parameters that relate daily trip generation to the character and intensity of land use in each traffic zone.
6. Develop an appropriate trip generation model and calibrate it using BATSC origin-destination data.
7. Develop and calibrate a suitable trip distribution model.
8. Examine the possibility of using BARTD future patronage estimates and decide on a modal split technique to be used throughout this study.
9. Conduct training sessions with the County staff.
10. Review traffic models with agencies concerned, and modify as necessary.

Final Product: The final product will be a technical memorandum describing the traffic model formulation and the conclusions derived from its use.

11. Interim Transportation Plan

11-3: FORMULATION OF ALTERNATE INTERIM  
TRANSPORTATION SYSTEM SCHEMES

Purpose: The purpose of this component is to formulate one or more interim transportation system schemes that will be feasible both functionally and technically.

Method: As a base for testing, the future street and highway network proposed by the County Public Works Department will be used. The two rapid transit lines, now under construction in the County, supplemented by trunk-line bus transit service will constitute the transit portion of the basic interim transportation system scheme.

It is expected that the loading of the base year transportation network to be accomplished under Work Component 10-6 will identify pressure points within the existing system. Gross analysis will be performed to see whether the basic system would relieve these pressure points and modifications will be made accordingly.

The Consultant will formulate alternate interim system schemes only if the loading of the modified basic interim scheme shows deficiencies in handling expected future volumes of traffic.

The base-year link-node network will be modified to represent the modified interim transportation scheme, and any alternates if necessary. These networks will be coded for computer analysis of future distances and expected travel times required for the trip generation, modal split estimation and network assignment procedures.

Work Items:

1. Review and evaluate detailed drawings and descriptions of the proposed County future highway plan.
2. Identify, from analysis performed under Work Component 10-6, areas of existing or possible future traffic bottlenecks.
3. Through performing a gross analysis of present and expected traffic volumes and capacities, check whether



proposed County plan would be adequate to handle traffic efficiently through 1980.

4. Incorporate a suitable 1980 transit system into the County proposed plan and study highway transit coordination in the light of transportation system objectives and criteria developed in Work Components 9-1 and 9-2.
5. Formulate alternate transportation schemes, if necessary.
6. Extend and modify the link-node network developed under Work Component 10-6 to represent each of the alternate interim transportation schemes.
7. Prepare a technical memorandum summarizing above work items.

Final Product: The final product will be a technical memorandum, supported by appropriate illustrations describing the main characteristics of the alternative interim transportation plans, to be used in testing procedures in Work Component 11-4.



## 11. Interim Transportation Plan

### 11-4: TRAFFIC FORECASTS, 1980

Purpose: The purpose of this component is to estimate traffic volumes at the 1980 level expected on various links of the alternate interim transportation system schemes.

Method: Utilizing the economic, demographic, and land use projections developed in Sections 4, 5, and 6, as inputs to the calibrated traffic generation model developed under Work Component 11-2, 1980 trip distribution among County traffic zones will be made. The resulting origin-destination matrices will then be assigned to their respective alternate networks formulated under Work Component 11-3 using calibrated distribution and modal split models.

Consideration will be given to utilizing a capacity restraint assignment, whereby it is assumed that certain elements of the transportation network are not changed insofar as capacity is concerned. In this system, the network elements are loaded only to their capacity levels after which additional loadings are diverted to alternate routes. There will be several basic assignments of highway and transit volumes, related to alternate networks tested.

The assignments will provide estimates of future highway and transit usage as well as turning movements at important roadway junctions and will indicate peak-hour loads and design requirements. Classification and capacity requirements of highway facilities will be revealed, as well as characteristics of transit service required to satisfy travel demands and the effect of varying levels of transit service on highway needs. Based on evaluation of these assignments, changes in the basic networks may be made and additional assignments prepared where the need is indicated.

#### Work Items:

1. Assemble projected 1980 land use, economic and population data by County zone for computer analysis.
2. Using the calibrated traffic generation model, determine volume of trips produced by each County traffic analysis zone.

3. Load one or more of the alternate interim transportation system schemes and prepare assignment. Use appropriate modal split techniques to obtain auto and transit trips.
4. Examine and evaluate results of the assignment. Modify network and reload if necessary.
5. Prepare a technical memorandum on above work items.

Final Product: The final product will be a technical memorandum describing alternative transportation schemes and giving expected 1980 volume for each scheme.

## 11. Interim Transportation Plan

### 11-5: SELECTION OF OPTIMUM INTERIM PLAN

Purpose: The purpose of this component is to select one optimum transportation scheme that is compatible with the land use as well as the transportation objectives of the County for inclusion in the revised interim general plan.

Method: Alternative transportation schemes developed and tested under Work Components 11-3 and 11-4 will be compared on the basis of the following considerations: functional adequacy, technical feasibility, financial feasibility, operating feasibility and environmental factors. Quantitative and qualitative values will be assigned to the above considerations for each of the alternate schemes, and the most favorable scheme in overall evaluation will be selected and recommended as the optimum interim transportation system scheme for inclusion, as the circulation element, in the revised interim general plan.

#### Work Items:

1. Prepare general capital cost estimates for each transportation system scheme.
2. Evaluate, in general terms, the technical, operating, and construction feasibility aspects of each scheme.
3. Coordinate financial requirements and programming for each scheme with those determined for other related elements of the revised interim general plan.
4. Compare alternative transportation schemes on the basis of the parameters developed under Work Items 1, 2 and 3.
5. Evaluate the compatibility of each scheme with the land use and transportation objectives developed earlier. This evaluation will encompass consideration of environmental factors, including integration and compatibility of transportation routes with the natural landscape and the character of established communities.

6. Present alternative transportation schemes, their advantages and disadvantages, to interested organizations and committees for discussion, evaluation and comments.
7. On the basis of all above work items, select one optimum transportation scheme.

Final Product: The final product will be a transportation plan for inclusion in the revised interim general plan and a report describing the alternative schemes and summarizing the advantages and disadvantages of each and supporting the selection of the optimum scheme.







## 12. Final Transportation Plan

### 12-1: REVIEW AND UPDATING OF BASIC TRANSPORTATION DATA

Purpose: The purpose of this component is to update all basic transportation data collected during the first phase of the study for use in the development of the final transportation plan.

Method: The two inventory manuals developed under Work Components 10-1 and 10-2 will be reviewed and suitable methods of maintaining and updating the transportation data will be included. Consideration will be given in this respect to the data bank system criteria and requirements developed under Work Component 2-2.

Using the revised manuals, the results of the detailed land use inventory and the 1970 census data, all transportation data collected during the first phase of this study will be reviewed and updated. Changes that have taken place since the last inventory, either in the operational schemes or in the physical plants, will be noted and incorporated into the data system.

#### Work Items:

1. Review, refine, and expand the two inventory manuals on highway and transit.
2. Coordinate type and form of basic data with requirements of the data bank system.
3. Assemble pertinent data from the detailed land use inventory and the 1970 census.
4. Obtain changes that might have occurred in the operational schemes and the physical plant of the existing transportation system.
5. Review and update, using results of above steps, all basic transportation data collected during the first phase of the study.
6. Review with County, and modify if necessary.

Final Product: The final product will consist of a revised highway inventory manual, a revised transit inventory manual, and a revised updated report of the characteristics of the existing transportation system.

## 12. Final Transportation Plan

### 12-2: REFINEMENT OF TRAFFIC MODELS

Purpose: The purpose of this component is to review, refine and recalibrate, if necessary, the trip generation, modal split, and trip distribution models developed during the first phase of the study.

Method: Parameters used in traffic models developed under Work Component 11-2 and calibrated according to the 1965 BATSC data will be checked, using results of the detailed land use survey and updated economic and population figures in the light of the 1970 census data. Limited new traffic surveys will be conducted, if necessary, to correlate accurate data with traffic parameters. A manual of procedures will be prepared to facilitate the use of the traffic estimation techniques on a continuing basis in the future.

#### Work Items:

1. Obtain updated land use, population, and economic data at the County traffic analysis zone level.
2. Identify model parameters to be checked.
3. Conduct limited traffic surveys, if necessary.
4. Correlate traffic characteristics with accurate support data.
5. Refine traffic models formulation.
6. Prepare a manual of procedures for the continuing utilization of traffic models.

Final Product: The final product will consist of a description of the revised traffic models formulation, and a traffic models manual of procedures.

12.     Final Transportation Plan

12-3: FORMULATION OF ALTERNATE FINAL  
TRANSPORTATION SYSTEM SCHEMES

Purpose:     The purpose of this component is to formulate one or more final transportation system schemes.

Method:     The interim transportation plan adopted during the first phase of the study will serve as the base for the formulation of alternate schemes. Emphasis will be placed on possible extension of the rapid transit system to outlying communities in the County and varying levels of highway and transit service. Link-node networks will be developed for each of the alternative schemes in accordance with methods utilized during the first phase.

Work Items:

1.     Review the interim transportation plan.
2.     Formulate alternative final transportation plans.
3.     Develop a link-node network for each alternate scheme.

Final Product:     The final product will be a description of each of the alternative final transportation system schemes.

## 12. Final Transportation Plan

### 12-4: TRAFFIC FORECASTS - 1990

Purpose: The purpose of this component is to estimate traffic volumes at the 1990 level expected on various links of the alternate final transportation system schemes.

Method: A method similar to that described for Work Component 11-4 will be utilized here. All input data and models used will be those revised in the light of the detailed land use inventory and the 1970 census materials.

#### Work Items:

1. Assemble projected 1990 land use, economic, and population data by County zone for computer analysis.
2. Using the refined traffic generation model, determine the volume of trips produced by each County zone.
3. Load one or more of the alternate final transportation system schemes and prepare assignment. Use the refined modal split model to get auto and transit trips.
4. Examine and evaluate results of the assignment. Modify network and reload if necessary.
5. Prepare a technical memorandum on above work items.

Final Product: The final product will be a technical memorandum describing alternative transportation schemes and giving expected 1990 traffic volumes for each scheme.

12. Final Transportation Plan

12-5: SELECTION OF OPTIMUM FINAL PLAN

Purpose: The purpose of this component is to select an optimum final transportation system scheme that is compatible with the land use and transportation objectives of the County.

Method: A method similar to that used for Work Component 11-5 will be utilized here.

Work Items:

1. Evaluate the technical, operating, financial, and construction aspects of each of the alternative transportation schemes.
2. Evaluate the compatibility of each scheme with the development and transportation objectives of the County.
3. Compare alternative schemes on the basis of (1) and (2) above.
4. Review alternative schemes with County agencies, local organizations and study committees.
5. Select one optimum scheme.
6. Coordinate the selected plan with other elements of the County general plan.
7. Develop an implementation program to be carried out by the County.

Final Product: The final product will be a documented report of the second phase of the transportation section of the study and a transportation element for inclusion in the revised general plan.







### 13. Scenic Route Element

#### 13-1: INTERIM GENERAL PLAN: SCENIC ROUTE ELEMENT

Purpose: The purpose of the Scenic Route Element work components is to designate a system of state and county thoroughfares within Contra Costa County which, by virtue of the aesthetic values of their settings, relationships to recreational and open space areas, and other considerations, warrant special attention in respect to right-of-way improvements and regulation of adjoining development. This component also is intended to determine and to recommend methods for accomplishment. The scenic route program is significant because, among other reasons, pleasure driving is a most important form of recreation, and benefits will accrue to developments in these routes' settings.

The Interim Plan Scenic Route Element phase will be concerned with laying the foundation for a scenic route program and designating a basic scenic route system.

Method: The Planning Department was directed to prepare a Scenic Route Element by the Board of Supervisors on November 28, 1967. As an already programmed project, it is initially to remain a departmental responsibility, but is incorporated into this study design because of its relationship to other study components and its joint Public Works-Planning Department orientation.

Available source materials, such as prior scenic route studies by the County Department of Public Works and publications of the State, will be used to initiate the study and develop study networks and draft standards. The primary original input will be a reconnaissance survey of the study network corridors. Throughout, consultation will be made with the State Division of Highways and other appropriate agencies, and the development of the element will be fully coordinated with complementary study sections in respect to land use, thoroughfares, recreational facilities and open space, and natural resources.

#### Work Items:

1. Assemble scenic routes library and file, including relevant California Transportation Agency publications, reports and elements of other jurisdictions,

and relevant analytical monographs. Evaluate these and prior scenic highways proposals prepared by the Department of Public Works. Identify relevant sections of County ordinances and programs for subsequent effectuation studies.

2. Draft work program and recommend advisory committee structure.
3. With advisory committee, review work program, develop constraints for interim plan activities, develop standards and reconnaissance study methodology, and identify a road network for study purposes. Prepare survey materials.
4. Perform field reconnaissance survey of roadway and environmental characteristics, map features, and prepare findings and recommendations. Adjust to other planning studies.
5. With advisory committee select basic system of scenic highways and recommendations for standards and effectuation measures. Relate effectuation recommendations to Component 6-9. Draft preliminary report.
6. Process scenic highways plan for adoption as an element of the revised interim general plan.

Final Product: The final product will be an accepted scenic route element of the County general plan, limited in scope, and complemented by accepted effectuation measures and organization.

### 13. Scenic Route Element

#### 13-2: REFINED GENERAL PLAN: SCENIC ROUTE ELEMENT

Purpose: The purpose of this phase of scenic route planning is to extend the basic scenic network previously designated in Component 13-1, to achieve a higher degree of functional coordination between scenic route and other planning, and to apply the experience which is expected to have been gained in scenic route effectuation to the development of better methods and organization. The interim plan phase work previously done may be regarded as a pilot program leading to the development of a full scenic route element in this phase.

Method: For present study design purposes, it is assumed that this component, as was Component 13-1, will be a Planning Department responsibility.

The primary activity of this component will be to evaluate an expanded study network of thoroughfares for addition to the basic system adopted as a result of Component 13-1. Some of the thoroughfares to be studied may have been identified previously but not recommended under Component 13-1; others may be new circulation corridors created through related planning; and still others may have acquired scenic route potential through open space, recreational facility, or recreational trail proposals.

Experience gained in the effectuation of the products of Component 13-1, and information gained from other sources, will be used to refine this component's methods and standards.

#### Work Items:

1. Obtain and analyze current physical resources, land use, thoroughfares, and community facilities from other components, and current scenic route information from the State and other sources. Review and evaluate experience with interim general plan scenic route element and related products. Evaluate needs for revised standards and effectuation.
2. Draft work program and process through advisory committee.

3. Review adopted network for possible deletions. Prepare survey standards and methods, and delineate the study network. Consult with the State and the advisory committee and revise if necessary. Prepare survey materials.
4. Perform a field survey and prepare findings and recommendations (see Component 13-1, Item 4).
5. Prepare effectuation recommendations, process through advisory committee, and relate to Component 6-15.
6. Process scenic route element for adoption as part of the refined general plan.

Final Product: The final product will be a full-scale and up-to-date scenic route element of the County general plan, fully integrated with other general plan elements, and complemented by accepted effectuation measures and organization.







#### 14. Airport Plan

Purpose: The purpose of this component is to develop a plan for future aviation facilities within the County which will be an element of the refined general plan.

A master plan study was conducted for Buchanan Field Airport, and the resulting report, dated June 1968, urged Contra Costa County to initiate as soon as possible a Countywide study of air transportation needs to determine overall aviation facility requirements. According to this report, which covers the period through 1980, Buchanan Field Airport can be expected to become completely saturated by 1975 unless additional airport facilities are provided within the County to accommodate the anticipated increase in demand for general aviation facilities.

Airport and community planning should be integrated to encourage and provide for the development of compatible land uses in conjunction with, adjacent to, or in close proximity to airports. Aviation facilities should be related to other community transportation facilities, business and industrial uses, depending upon the nature or type of such uses, recreational requirements, and disaster relief transportation needs, to the greatest extent feasible.

Method: Data available from the Federal Aviation Administration (F. A. A. ) regarding airport criteria, flight patterns, clear areas and protective zones, and property requirements, will be reviewed and evaluated. Data will be obtained from other agencies and studies, particularly the State of California Department of Aeronautics and its current study of statewide aviation requirements, and the Bay Area Study of Aviation Requirements (BASAR). Generally, information will be sought from the FAA regarding interstate aviation requirements, from the California State Department of Aeronautics for intra-state requirements and demands, and from BASAR for regional requirements, to the greatest extent possible when this information is developed and made available. Consideration will also be given to heliport, VTOL, and STOL requirements and potentials. An airport in Eastern Contra Costa County and in the Richmond area, as well as airports in other areas suggested in the FAA National Airport Plan, will be included in the investigation and evaluation. Upon developing future aviation requirements within the County, appropriate airport sites, or alternative sites, will be proposed or recommended, and a program will be suggested for the development of the required airport facilities.

Work Items:

1. Review and evaluate the 1950 Contra Costa County Airport Plan.
2. Evaluate economic and population data and forecasts with respect to future airport requirements.
3. Determine annual and peak-hour requirements of existing and projected aircraft operations.
4. Evaluate general and commercial aviation requirements through 1980.
5. Determine airport classification as to type; i. e. , FAA classifications, such as General Utility, etc.
6. Select sites satisfying appropriate design criteria, which are considered compatible with surrounding land uses, both existing and proposed, and based on desirable relationships with other airport locations.
7. Evaluate sites selected on the basis of convenience and accessibility; compatibility with other elements of the general plan, including transportation and other community facilities, business, industrial, residential, and recreation areas; noise abatement requirements; right-of-way and aviation easement requirements; and land acquisition, development, and facility construction costs.
8. Determine the relationships between aviation and business and industrial service development which can be advantageously used in airport planning.
9. Determine financing methods, suggesting alternative proposals, if appropriate, incorporating financial assistance programs, and providing recommendations for a preferred financing solution.

Final Product: The final product will be a Countywide plan for aviation locating proposed sites for future aviation facilities, and a report including an evaluation of future aviation requirements within the County and incorporating recommendations for plan implementation

based upon this evaluation. The plan will be incorporated into the refined general plan as an element thereof, and the financial program containing cost estimates and recommended priorities will be used in developing the County capital improvement program.









15.     Housing Element

15-1: PRELIMINARY HOUSING ELEMENT

Purpose:     Both State of California planning legislation and Federal "701" planning assistance eligibility criteria now require housing elements to be included in city and county general plans. These requirements were enacted in response to an emerging crisis in urban housing, particularly among minority and low-income groups, but also extending to other groups who may be disadvantaged by selective development practices. To comply with these legislative mandates and to meet generally its responsibilities in respect to housing and residential planning, Contra Costa County must analyze its housing situation, residential policies, and developmental controls, and determine an appropriate course of action, to be represented in a general plan housing element.

California legislation now requires that general law cities and counties add housing elements to their general plans by July 1, 1969. Contra Costa County, and most other jurisdictions, cannot produce full housing elements by this deadline because the required data is not available, but this component recognizes that significant preparatory steps ought to be made as soon as possible to comply with the law.

Method:     This study was conceived as a Planning Department responsibility, and staffing for its execution was requested prior to the changes in Federal requirements and the orientation of the Land Use and Transportation Study which now makes it a necessary and integral part of the program.

The preliminary housing element component will be concerned with developing an overview of the Contra Costa County housing resources, problems, and programs, and with developing a work program and organizational arrangement for preparing the full-scale housing element.

Principal work on the preliminary housing element will be carried out by a planning economist, a new project planner position in the Planning Department authorized January 1, 1969. Work on this element will commence as soon as the position is filled.

Work Items:

1. Assemble housing element library and file, including study designs, project guides and methodologies from other jurisdictions and concerned organizations, housing monographs, and available housing and related data. Evaluate available data. Inventory public and private housing organizations in Contra Costa County, and describe their programs and functions. Inventory and evaluate existing legislation and regulations. Consult with concerned agencies and organizations.
2. Draft preliminary work program, preliminary statement of housing problems, and obstacles to their solution, preliminary statement of housing goals, and recommendations for housing element advisory committee composition. Draft criteria for condition-of-structure field survey criteria.
3. With advisory committee, determine detailed work program including field study criteria.
4. With advisory committee, determine preliminary housing element to consist of analysis of housing situation, identification of housing problems, statement of housing goals, and identification of the means available to solve problems and achieve goals.
5. Obtain approval of preliminary housing element.

Final Product: The final product of this component is intended to be an accepted work program and organization for the preparation of a full-scale housing element, in conjunction with other activities of the Land Use and Transportation Study.

15. Housing Element

15-2: REFINED GENERAL PLAN:  
HOUSING ELEMENT

Purpose: The purpose of this component is to prepare the full-scale housing element of the refined general plan according to the work program produced in Component 15-1. Although that work program could recommend otherwise, it is not presently anticipated that an interim plan product, per se, will be prepared because of the reliance which will have to be placed on 1970 base-year data, but it is also expected that informative and useful analyses and recommendations will be derived from the preliminary element preparation effort.

The refined general plan housing element will be designed to comply with State and Federal housing element guidelines, and with recommended professional standards on the subject. These are only partially available at this writing. In addition, the element should be Countywide to the extent feasible, and fully coordinated with other local agency and regional agency housing efforts. Finally, the element should serve as a complement to, and a refinement of, the residential land use recommendations of the refined general plan.

Method: For present study design purposes, this component is designated as a Planning Department responsibility. The actual scope and specifications of this component will not be known until the work program has been prepared, but certain characteristics can be anticipated. First, the element will be largely predicated on base data derived from the 1970 census, from a condition-of-structure survey performed in conjunction with the existing land use inventory, and from services data compiled in other work components. Second, the element will be oriented to goals achievement and problem solving. Third, heavy emphasis will be placed on the economic relationships of housing production and consumption. Fourth, the element will be program oriented, designed to recommend specific methods and a particular sequence of achievement.

Work Items:

1. Perform condition-of-structure and housing inventory survey. Array and analyze data from survey, 1970 census of housing, and other components concerned with

population, economics, land use, and services, as relevant to housing.

2. Perform market analysis of present and future needs.
3. Identify housing needs on a priority basis; identify obstacles to their accomplishment; relate available housing programs to satisfaction of needs; identify gaps in program coverage.
4. Draft a recommended housing element, coordinated with other general plan elements, and an action program consisting of short-and-long-range proposals and suggestions for new programs and legislation. Process for adoption.
5. Identify and recommend needed additional housing studies.

Final Product: The final product will be an adopted general plan housing element, including an action program, fully coordinated with other elements of the general plan.







16. General Plan

16-1: REVISED INTERIM GENERAL PLAN

Purpose: The purpose of this component is to coordinate relevant study components and develop a composite, Countywide, revised interim general plan for adoption, and a descriptive report thereon.

Method: Inputs from all the pertinent components of the study will be compiled and correlated into a composite interim general plan and documentation report. This will be done at the end of the third year of the study.

Work Items: The following steps will be undertaken:

1. Compile interim revised land use plan, open space plan, transportation plan, scenic route plan, and housing plan.
2. Correlate above and develop composite countywide interim general plan.
3. Submit for review and action.
4. Prepare supporting explanatory report.

Final Product: The final product will be a revised interim general plan for the County, and supporting documentation.

16. General Plan

16-2: REFINED GENERAL PLAN

Purpose: The purpose of this component is to prepare a refined general plan for adoption, based on 1970 base-year data, and a composite report describing the plan and its elements.

Method: Inputs from all the pertinent components of the study will be compiled and correlated, near the end of the fifth year of the study, into a composite refined general plan.

Work Items: The following steps will be undertaken:

1. Compile revised and extended land use plan, open space plan, community facilities plan, public utilities plan, transportation plan, scenic route plan, airport plan and housing plan.
2. Correlate above and develop composite refined general plan at the Countywide level and for the planning areas of the County.
3. Submit for review and action.
4. Prepare report describing and explaining the plan.

Final Product: The final product will be a refined general plan for the County, and supporting documentation.



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










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